Gleanings in Bee Culture

85 years of continuous publication by the same organization.

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Bee Lines to The Editor

Do Not Melt Up Old Combs If They Are Good

"I just can not agree with some of the fellows who write articles in Gleanings. I have old brood combs in my outfit that have been in use for 30 years and I wouldn't think of melting them up. My bees take care of that. Many times I have caught them in the act of gnawing down the old cells with black cocoons and building them out from the base with new cells. It is a lot of work to render up old combs and put new sheets of foundation in them. They have to be wired with new wire too.

"I have found colonies a lot of times with drones that were raised above the excluders and always presumed they were from eggs that were laid by laying workers. I have for years been puzzled by my bees when they were superseding their old queen, having a young supersedure queen laying below the excluder and also one laying above the excluder, both sisters. How do they manage? Do they raise a young virgin and have her fly out and mate and come back upstairs through an auger hole or small opening and then raise another and have her come back downstairs? The logical conclusion in my mind would be this: They carry a fertile egg up from the lower hive and raise their virgin upstairs.

"When I have used the Demaree system of swarm control I have had a lot of young queens mate through an auger hole upstairs, but this season I have had a number of young queens laying upstairs where no brood had been lifted. This season I found an extracting comb where the bees had raised three supersedure queen cells above the excluder and plain evidence where a virgin had popped out of all three of them. The old queen had not been above and there was no sign where she had ever had a brood nest upstairs." —A.N.N.

Men Folks Not Made for Looks

"Dear Jack: **Don't** do that again! When I came to page 552 in the September number, I was startled to see a black lined square where your picture generally is, but was happy to read that it was not what I thought it was. I think you had better put your picture back there. I like to see who is talking to me. Maybe you are not good looking, I am no judge of that, but I know you have good thoughts. After all, us men folks were not made for looks. I have that consolation."—L.M.L.

A New Use for Talcum Powder

"I have been reading your 'Talks to Beekeepers' in GLEANINGS for some time now and admire your unassuming style, and obvious experience.

"I read somewhere, quite a while ago, that bees wouldn't sting one's hand and arms provided said hands and arms

(Continued on page 700)

Monthly HONEY Report

WALTER BARTH, Field Editor

Dark v.s. White Honey

GLEANINGS' READERS have reacted very strongly to my emphasis on white honey a few issues back. Mention was made of my seeing water white honey from Utah while visiting the honey plant of the Superior Honey Company. Actually the amber honeys are equally as good or even better from the health standpoint than the white honeys. My reaction to the white honey was purely one of admiration for a rare honey, namely water white. There is nothing finer than a good amber honey, and personally, a clover-goldenrod blend is one of my favorites. Also many of the darker honeys of the South are delicate and mild in flavor and of excellent table grade quality.

Getting to the business at hand, reports show that the cotton crop in California is about one-half to two-thirds of normal. Blue curl has failed to provide a fall flow in some areas, too. White honey is bringing quite a variance in price: 11c to 13c while amber honeys are selling for 10 to 10½ cents.

Utah, Wyoming, and neighboring states report spotted conditions with the crop averaging about 70 per cent of normal. Much the same is true for New Mexico and Arizona. Prices expected and received here are much the same as for California.

The crop is very good in northwest Colorado with reports of 200-pound averages. And, ironically, in other parts of the same state the crop is short and the honey is very thin. Here in the Southwest a fair crop has been harvested. Texas prices range from 12 to 12½ cents for white honey with some purchases as low as 10½ cents. Amber honey is bringing 10½ cents on the same market.

Midwest

In Nebraska, South Dakota, and Iowa there has been a lot of rain which has slowed the removal of the honey crop but at the same time it is providing a good build-up of legumes for next year. In these, no honey sales have been reported. Present offers tend to be a little lower than last year. Retail price cutting is showing up in this area and may become worse as the crop reaches the packers. Producers are asking 12½ cents for their white honey. In general, the crop in this area should be nearly equal to what it was last year.

Southern Conditions

Going into the South our reports show that bees are generally in poor shape with winter stores short. Dry weather during the past two months has been partly responsible. It is particularly true in Tennessee, Mississippi, and Alabama. Virginia, on the other hand, has had some saving moisture that should promote a fall crop.

Along the Great Lakes the crop is spotty. Ohio's summer crop was off but hopes are high for a fall flow. Michigan did well generally and with some rain a fall flow was anticipated. The fall honey plants look good in Indiana, and with moisture ample a flow is expected. White honey prices range from 13 to 16 cents and 12 to 15 cents for amber.

Drought Relief

New Yorkers are asking 12½ to 15 cents for their white honey and 12 to 13 cents for amber. Bees are generally in good condition with sufficient stores for winter. New Jersey and parts of Pennsylvania are still suffering from drought. Some beneficial rain has fallen in New England, and while it won't produce a crop, it will be instrumental in saving fall honey plants not totally damaged by the drought. There won't be much honey coming out of New England this year.

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1. The names and addresses of the publisher, editor, managing editor, and business managers are:

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Editor: M. J. Deyell, Medina, Ohio.
Managing Editor: M. J. Deyell, Medina, Ohio.
Business Manager. Alan I. Root, Medina, Ohio.

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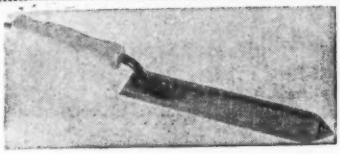

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What Goes on *Outside* of the Hive

W. G. le MAISTRE,
The late extension specialist in beekeeping for Alberta, Canada

FROM TIME to time our knowledge of bee behavior is enlarged. Various investigations have provided detailed information fairly recently on how and why the worker bee does what it does. Some of the activities of bees in gathering food have been described.

Now, in the work of Brian Hocking, F.R.E.S., Professor of Entomology at the University of Alberta, under the title of "The Intrinsic Range and Speed of Flight of Insects" is information on insects' ability to maintain themselves in flight, with several references to what a bee can accomplish in pay-load, distance, speed, and endurance. There is also some interesting data on nectar supplies available.

Investigations of this kind not only increase our understanding of bee behavior in a theoretical way, they enable us to operate more intelligently and efficiently, and having a better knowledge, we can also derive more pleasure from our work.

While this work, as the title suggests, is a general treatise on insect flight, there is much interesting and useful information to specialists in apiculture and the beekeeping fraternity in general.

It contains observations on nectar secretion by plants relating to circumstances surrounding the Port of Churchill on Hudson's Bay in Northern Manitoba. And while conditions may be different elsewhere they may still be comparable. For instance, Professor Hocking shows that nectar secretion in 1947 - 1952 began about June 15th and it lasted for about 60 days, being fairly intense from June 25th to August 15th. The peak of secretion was about July 21st. During that period there were 11 days when the wind speed exceeded the maximum cruising speed of flight of honeybees.

At Edmonton, 385 miles farther south and west, in a district where good honey flows are thought to exist, we have no more than 50 days of main honey flow. The peak at Edmonton occurs in mid-July. And for the whole of this period there are only 15 good days in the average season—that is, days when the scale hive gains ten pounds or more per day. Thus with the exception of some early spring flows, the honey flow at Churchill would seem not unlike that at Edmonton.

Tundra at Churchill yields a sugar equivalent to 12,000 pounds of honey within reach of a single apiary site per season. The nectar produced averages 49 per cent sugar with several species of plants secreting nectar containing over 70 per cent sugar. Competition for this nectar from other nectar feeding insects which may fly at lower temperatures, particularly mosquitos, might limit the amount of nectar honeybees could gather unless they were controlled. Do any of us know what is the

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nectar potential of our own territory? What proportion of this do we get? Could we do anything to get a larger share?

Fuel Needed for Flying

Beekeepers may often wonder from where does the energy come to permit a bee to fly. In some insects this is stored in the body during larval life. The honeybee larva does not do this. The bee must have food from the hive to provide fuel to go gathering. A bee consumes its own weight of honey in about six and one-half hour's flight. At the height of a honey flow a hive with a field force of 2 kg (approx. 4.4 pounds or 20,000 bees) is using up something like 2 kg (4.4 pounds) of honey daily as fuel in flying.

And what about a cooling system for its engine. A man sweats, a dog hangs its tongue out, does a bee have to carry a cooling unit and water to operate it?

The amount of nectar a bee must carry, its sugar content, its availability, its abundance, the distance she must travel, and the stores within a hive are all factors influencing hive activities. The amount of food required by a bee as fuel to fly to gather nectar must obviously be less than the amount gathered. Eckert has shown that five miles appeared to be the maximum distance of a food supply beyond which the hive loses weight. Professor Hocking has shown that a bee may ordinarily carry .00012 of a pound in one trip (perhaps more where the sugar concentration of the nectar is high). A maximum load was found to be from .00014 pound on 25 per cent sugar solution to .00016 on 60 per cent sugar solution.

In our own experiences we have from time to time observed some remarkable gains in weight made by the scale hive in 24-hour periods (24, 27, 36, pounds). We have had trouble in reconciling these figures with information previously available particularly since various investigators have reported on the number of trips made by individual bees in one day when working under favorable conditions. The best records vary between 10 and 20 trips with 10 being the more common. With this information as a basis it is possible to estimate the field force necessary to gather 36 pounds in one day. With each bee making 10 trips and each carrying .00012 of a pound, 36 pounds could be gathered by a field force of 30,000 bees.

The work entailed interesting studies of the energy available from chemical reserves, feeding habits, and supplies of food; the power required to keep an insect airborne and in forward flight; the mechanical efficiency and aerodynamics of insect flight. The techniques and experiments are well described and illustrated.

There is some discussion of migration, dispersion, and evolution as related to insect flight. The practical implications as affecting disease transmission particularly by mosquitoes and the relationship between these insects and honeybees is also discussed. Of aeronautical applications Professor Hocking says "Many authors . . . have suggested that the designers of aircraft can learn much from the study of animal flight. This may be true, but most of these authors refer to efficiency, and in the matter of efficiency the aeroplane is already far ahead of the insect, particularly as regards the power plant."

Amongst other interesting conclusions, such as the power output of the insect muscle being "only about three to six times that of human muscle" or, a unit basis, is a statement that the maximum flight range of any insect, unable to feed while flying, may be set at about 1000 km (620 miles) and the maximum speed in short bursts 16 m per second (36 m.p.h.).

For the beekeeper the significant points of this work are: The distance a bee must travel for nectar—fuel consumption; the sugar concentration of the nectar; the amount of nectar secreted by plants; availability of the nectar to bees; the climatic conditions at the time nectar is available; the competition from other nectar feeders.

Our Cover Photo

THE CLOSE of another season is approaching. Bees have labored early and late during the long summer days. The beekeeper has removed a part of the surplus honey and it is hoped he may leave an ample amount on the hives for winter and early spring food. The sturdy evergreens stand as mute sentinels to help shield the hives from the cold winter blasts.—Photo by T. Doonan.

Property on Pelee Island belonging to the Ontario Beekeepers' Association.

Pelee Island Queen - rearing Project

A. C. ASKEW, St. Thomas, Ontario, Canada

PELEE ISLAND belongs to Canada. It lies at the western end of Lake Erie, roughly half way between the shore lines of Ontario and Ohio. It has become internationally famous during the last decade for two special projects, both of which in some degree concern Uncle Sam and Johnny Canuck. (It also became rather well known in previous years for widely different reasons, being concerned in the war of 1812, and the troubles of 1837, and the natives can still tell you exciting stories of the prohibition era, and the rum-running exploits between Canada and the U.S.A.) The two projects mentioned, however, are both of a non-military and legal nature.

One that concerns us more particularly is the queen-rearing project carried on by the Apiculture Department of the Ontario Agricultural College under Professor G. F. Townsend.

The other has to do with the rearing of pheasants also under the supervision of the O.A.C. This project came about in the first place by the bringing over from Ohio several pheasants by American campers. Incidentally, Pelee Island is now a happy hunting ground for seven or eight hundred summer residents, mostly from Ohio and Michigan,

Caging a queen bee.

who have built cottages along its wide sandy beaches.

The pheasants found conditions very much to their liking, and in true American fashion went in for mass production. The local municipal authorities gave them protection, and no natural enemies like wolves, foxes, or polecats being on the island, they thrived amazingly. At the annual two-day hunt which takes place each fall, an average of 12,000 pheasants fall to the guns of the sportsmen, and enough are left for reproduction. They become very tame during the summer, and in the four bee yards maintained on the Island one can usually find several nests among the hives. In fact, I used to regularly run over the tail of one hen sitting on a nest along the track into one yard and she rarely stirred off the nest.

Now about the Queen Rearing Project

Ontario beekeepers had felt for a long time that we were becoming too dependent on southern breeders for our supply of queens.

Pelee Island being the most southernly inhabited area in Canada, suggested itself as the ideal place to do some experimenting.

Although the queens shipped by our southern friends were usually good stuff, sometimes they were very poor, and sometimes too, one found the queens from well-known breeders did not live up to their reputation. In other words, the line was "running out".

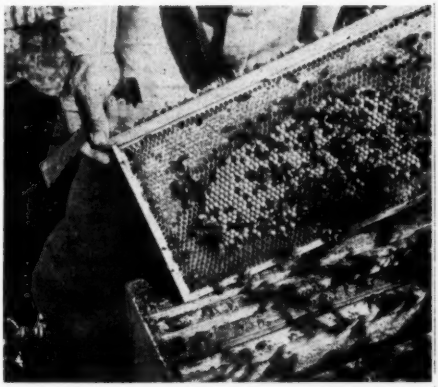
The Ontario government voted funds for setting up the project, and optimistic ideas were formed about the possibilities of large-scale production of queens on Pelee Island. But they didn't work out. It was quickly found that though the spring is from ten days to two weeks earlier than the mainland, production of queens before July 1 or thereabouts was impossible. Also, it soon became apparent that the project was up against the same trouble as afflicts southern breeders — maintaining quality.

Now there came into being what must be a unique example of international cooperation in the beekeeping

world. The emphasis was changed from production to research and experiment.

Three governments are now concerned in the project, and the Ontario Beekeepers' Association through its ownership of "The Queen's Cottage", (the operator's residence) is also an interested party.

The U.S.D.A. under Dr. C. L. Farrar and Dr. W. C. Roberts at Madison, Wis., supply the instrumentally inseminated mother queens chosen by them from records of production and from



Examining a comb of drone brood.

queens sent to them from various parts of the world.

The Ontario government provides the facilities, equipment, and personnel to produce queens on the Island by natural mating with drones also from queen mothers supplied by Madison, and in much larger quantities than could be obtained by instrumental methods and the Canadian Federal government and the U. S. also through their respective experimental apiaries in various parts of both countries, carry out the testing for behavior and production that forms the basis for decisions about future breeding programs. Each year 1500 queens are shipped

Preparing queen cages

from Pelee to the testing stations and to beekeepers who take part in the program.

The methods used on the Island follow fairly closely those by breeders in the southern states, though the small mating box so common in the South is not favored.

The regular 10-frame Langstroth hive divided by a tight Masonite board is stocked in each compartment with a frame of maturing brood fairly well covered with bees, of course, and a

Painting the thorax of a queen bee.

XUM

frame of honey and/or syrup. The bottom board is also tight and a one-inch flight hole is provided at each end, with a second screened hole for ventilation. A ripe cell timed as near as possible to emerge within 24 hours is placed between the frames.

The first check is made within three days. If the cell has a nice cleanly-cut open cap, it is assumed a virgin is present. If the hole is on the side, or the cell is torn, that's not so good, and the nuc is examined. The virgin may or may not be present, usually she isn't under these circumstances.

There are several signs that indicate queenlessness, besides a torn cell, and none of them are absolutely certain, but taken together they usually add up.

A distressed roar is a bad sign, building cells, nervousness of the guards, drifting out, and low morale generally mean "a miss," and another cell is inserted.

Down the center of the zinc cover are written the days of the month from the 1st to the 31st. When a cell is placed in a nuc, the end of the cork that closes the flight hole when the nuc is not in use, is dipped lightly in a mixture of beeswax and paint, and stuck near the current date. If a virgin is present on the first check the cork is moved outward about three inches. Ten days later when and if a laying queen is found, the cork is moved to the outside edge. Thus, as the operator moves among the nucs he can tell at a glance the condition of every one, and what and when examination should be made.

In addition, and this is highly important in the Pelee set-up, the strain of the mother queen is entered alongside the cork on the cover. If a cell becomes "a miss," or when a laying queen is picked up for shipping, the code letters indicating the strain are rubbed or struck out, and the procedure starts over again with a new cell.

Seven or eight different crosses are under way during the season, and it is essential that as near a "bee fool-proof" system of records is necessary if the project is to be as valuable as it is hoped to be.

Actually, we have little trouble. Sometimes, perhaps half a dozen times through the summer, a laying queen will be found in a nuc obviously not of the strain marked by the code letters. One gets to know the different strains by color, number of bands, body conformation, etc.

One of two things may have happened. A virgin from another nuc may have drifted in and been accepted, or on the first check for cell emergence, all the signs pointed to "a miss". A new cell was inserted, code letters changed accordingly, and all the time a virgin was present. Reference back to the original cell soon puts the record straight.

The actual technique of queen rearing, as I have said, follows closely accepted practices, but we do use some variations that I would like to describe in another article.

Bees as Smugglers

The art of smuggling, cultivated through the ages by free-trade enthusiasts, added a new technique during World War II in the form of an insect air lift. In northern Italy, a merchant had 200 pounds of honey. In Switzerland, a beekeeping trader had a market for it. Between them lay the closed and guarded border. The resourceful Swiss got a message through to the Italian, instructing him to bring his honey jars to a forest near the frontier and leave them there, uncovered. Then the trader moved his bee hives into the forest on the Swiss side, about 1,000 yards away. The bees didn't take long to discover the rich supply of natural food. In less than three days, busily bee-lining back and forth, they smuggled the entire 200 pounds of honey to their own hives, unsuspected by the border guards—who certainly would have been ill-advised to try and stop them.—by Marion Roth, New York, N. Y. Taken from "True Magazine", March 1957.

Do Bees Sense Fear?

E. D. FOX, Washington, D. C.

FRIENDS OFTEN ask me if I am not afraid to have beehives in our back yard, especially since I must frequent the place daily.

I must admit I do have a healthy respect for the bees and more so since I have been stung. Thinking it over, I realize there is no more danger now that my husband keeps bees than there was before.

I have turned over a rock in the flower bed and accidentally disturbed a family of wasps and received a painful sting. Another time I was painting the oil tank with a wasp flying all around me. After the job was finished, I walked away from the place and was popped again. That wasp probably didn't like the odor of turpentine any more than I did.

Years ago as a child I kicked a yellow jacket's nest hidden under some leaves and made a mad dash for home, but I was stung four times and ran out of my shoes before reaching safety.

If I had disturbed a honeybee in some such manner I probably would have been stung by one before we kept our own bees.

During the five years we have had our hives I have been stung twice by honeybees and both times it was my fault. While attempting to make snapshots I went too close to the hives and a honeybee became entangled in my hair. I tried to help it get out but made it angry instead and I was stung on top of the head. It was a sensitive place to get stabbed and I'm careful to cover my head when that close for I do not want a repeat performance.

Another time while walking through clover a bee crawled down inside one of the fuzzy socks I was wearing and when I tried to release it, I must have crushed it, for it stung me on the ankle bone. This caused pain and stiffness, short-lived though, for the effects left in a day or two.

Now I wonder if the honeybee can sense fear as animals can. When we first started our bee venture in 1952, I was braver than I expected I actually would be. I worked on the hives with my husband sometimes with arms and hands bare and at times wearing summer shorts. I did wear a bee veil, however.

There were times while picking beans in the garden close to the bee yard when I was directly in the line of the bees' homeward flight.

One day in particular, a storm was brewing and I was stooping down at my bean-picking task when I heard the bees whizzing in from the field. They came charging down like tiny dive bombers, dozens of them. Fortunately they chose to soar in over my head and not on it.

I have taken naps in a hammock not 40 feet away from the bee yard. Bees have flown all around me and on occasion alighted on my arm without stinging me. Then I had no fear.

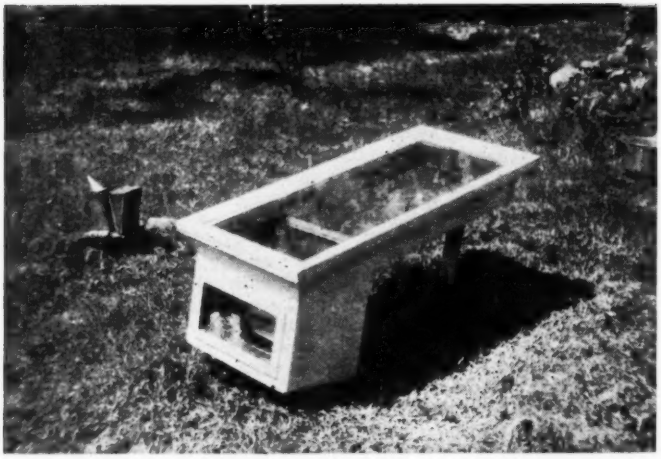
Now since I have been stung painfully, I must show fear when I get too close to the bees. Suddenly they are not as friendly as they were before and I am not nearly as brave. I believe the little creatures know this, so while I may not exactly be afraid I do not take the same chances and am more cautious than I used to be.

Cows Ate Combs

"RECENTLY we observed cows eating combs that had been stored for over a year. The cows overturned four supers and ate the combs out of each frame. Next day the cows pushed over another stack and devoured the combs in one hive body. The other hives fell so that the cows couldn't reach the frames."—Taken from November, 1956 issue of **B Notes** put out by Colorado A & M College.

A Solar Wax Extractor

ROBERT H. GARDNER,
McDonough, Ga.

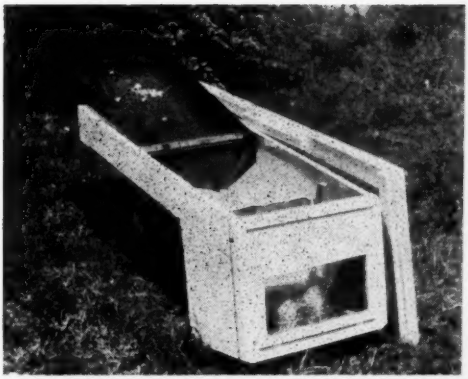


A solar wax extractor is a handy piece of equipment. It saves wax that might otherwise be wasted.

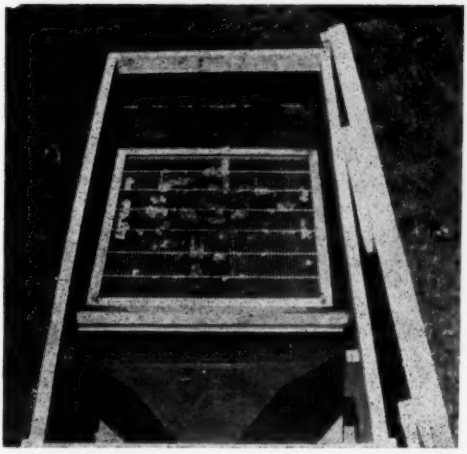
AMONG BEEKEEPERS there are many that are very handy with tools. The extractor resulted from a meeting of the North Georgia Beekeepers' Association at my home. Mr. Cantrell of Atlanta brought an extractor when we asked that every member display the ideas that they had been working on. Almost every item associated with beekeeping has at one time or another been made or modified by those persons using them.

This extractor was made of materials around home. The glass and metal pans are purchased items. The baffle screen is used to stop the trash from flowing along with the wax. In order to get maximum heat the extractor pan is angled toward the sun more than is actually needed, therefore the baffle screen is used.

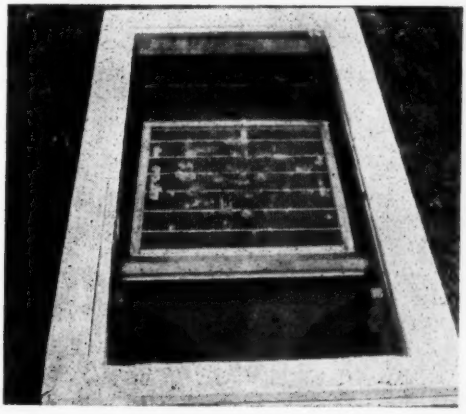
Plans are now to mount the whole thing on a pivot for easier turning toward the sun for maximum heat. The solar wax extractor has solved the wax problem for me. No more boiling water and straining hot wax.



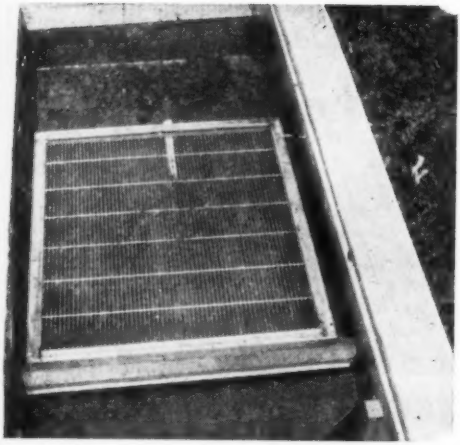
No. 2 The extractor has a hot rolled steel pan 3" deep, 18" wide and approximately 36" long. The pan is removable for cleaning or storing during winter.



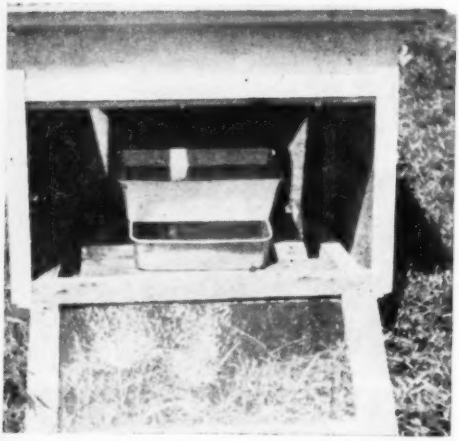
No. 3 Among the items used by some beekeepers that at times must be cleaned is the queen excluder. This is a time-consuming job if done properly but often the excluder is damaged by using hive tools, putty knives, or torches of various kinds. Here the excluder is placed inside the extractor on a small block near the top and resting on the baffle screen at the bottom. Burr comb on the excluder cuts down the flow of air inside the hive and should be removed. No matter what you do they continue to build it.



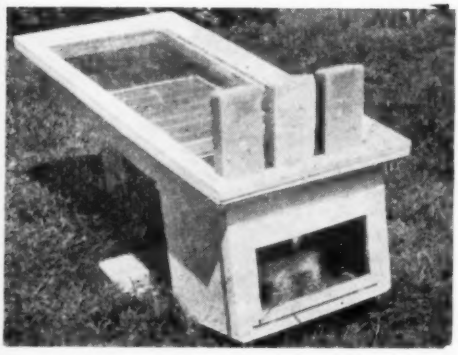
No. 4 The glass cover is placed on the extractor and the sun does the rest in just a few minutes.



No. 5 In a matter of just a few minutes the excluder is free of wax. The wires retain an almost invisible film of wax that surely is more acceptable to the bees than the bare wire.



No. 6 The lower compartment of the extractor opens to remove the wax mold. (The wife's best bread pan makes an excellent mold.) The sides are angled for easy removal of bread or wax. The area beneath the pan is water tight in the event that there is more wax in the extractor than the pan will hold. Some solar heat is afforded by the angled glass doorway in the extractor.



No. 7 The extractor with samples of wax that need no cleaning or washing.

"Pollen Loads of the Honeybee"

A review of the book by Dorothy Hodges, an English author

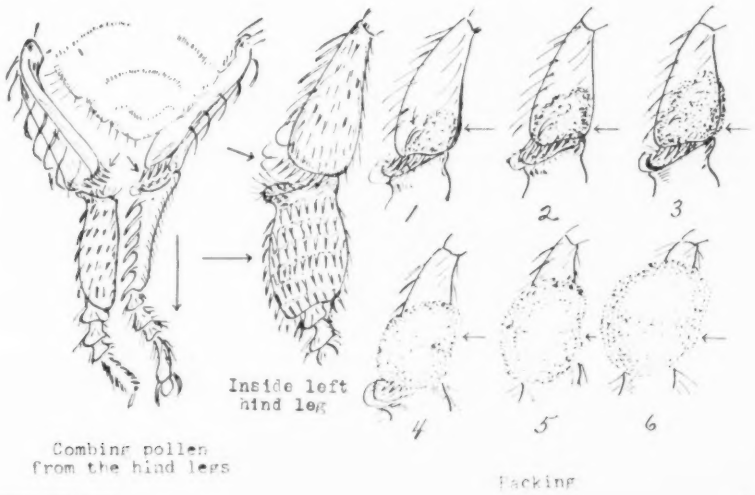
CHAS W. GOUGET, Glen Ellyn, Ills.

THE AUTHOR is both an artist and an experienced beekeeper, and her aim has been to provide an introduction to the sources of pollen, its uses, and the process of collection and identification of pollen both in the load and in honey. The colors of pollen loads have been recorded for 120 bee plants and have been presented in the form of a six-page color chart produced by mixing water colors exactly to match a fresh pollen load. The pollen packing process of the honeybee is also illustrated in color plates, and by several drawings by the author. Thirty plates are devoted to large-scale microscopical drawings of pollen grains of some 140 species of British bee plants, many of which are found in the United States.

This book can be of considerable value to the beekeeper to determine plants that are being worked by the bees, and whether the plants that are being worked will produce the best honey, or in fact any at all, since it does not follow that because bees are gathering pollen that they are also gathering nectar. Bees often gather pollen from flowers that do not produce nectar, and when there is any doubt about the source of the pollen being gathered only microscopic examination of the loads can produce the correct analysis.

Historical

Few scientific papers on pollen loads have been written, and most beekeeping books give verbal descriptions of pollen



load colors, such as: yellow, golden yellow, pale yellow, wax yellow, dark yellow, orange, orange red, etc.

Reiter (1947) appears to be the first observer to match the colors of pollen loads to a color dictionary prepared by Maerz and Paul.

Between 1908 and 1928 Betts made observations of pollen loads at the hive entrance. Loads were removed with a small paint brush and the source of the load identified by microscopical examination. Colors were recorded in water colors, but the results were never published.

Also, Harris and Filmer working in New Zealand about 1928 described the differences in color of pellets composed of the same pollen type, but since the pellets were sent a considerable distance after being collected, the colors were not comparable to fresh pollen. The variation in the color of pellets among some species was very wide, especially among the thistles. Since then other writers have recorded other variations in the colors of pollen loads in a single species due to differences in moisture content and to differences in adulteration with foreign particles.

Percival describes the observations of a single hive in Wales from late April to late August 1945. Pollen loads were identified by color, and specimen loads confirmed or identified by microscopical examination.

Jaxheimer working in Munich from 1946 to 1947 took samples of pollen-laden bees at hive entrances and identified all loads by microscopical examination. Results were given in the percentages of each plant species gathered by the bees during each month.

About the same time (1945 to 1946) Synge and Maurizio at Liebefeld, using pollen traps, carried out researches on the pollen intake of colonies. Results showed that colonies differed in their selection of available pollens even though the hives are placed side by side. Different species of flowers were found to be visited for pollen at different times of the day corresponding to the dehiscence of the anthers of the species.

Colors of Pollen Loads

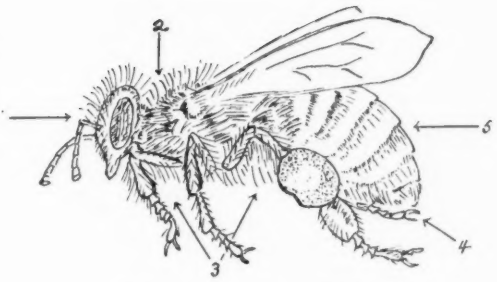
A positive color always tends to change the color near it to its complimentary tint, i.e. green would tend toward crimson and orange toward blue. From this fact it can be seen that the color of a pollen load will vary with the kind of light that falls on it. Since color may be reflected from pollen loads from a blue sky or from yellow clouds colors will tend to vary, and true colors will be obtained only in proper, uniform light. A good north light in the morning seems to be the best for color recording. In the evening the light tends to be more yellow, a fact which makes color matching more difficult. Water colors were used by the author to match the colors of the pollen loads.

Causes of Color Variations in Pollen

In general, dark loads of pollen can be expected in the morning or after a rain or frost, or at the beginning or ending of the flowering period when few bees are collecting the crop. Loads lighter in color may be expected during fine, sunny weather when the flowers have just opened and the pollen freshly released. As the pollen becomes older it becomes darker, but when it takes on considerable water the color again becomes lighter or may practically disappear due to the swelling of the grains and the dilution of the color. However, the color of the pollen load is determined largely by the color of the honey mixed with it, and the amount of moisture in the honey. Honey with a greater moisture content usually produces a darker pollen load which may be affected also by the amount of foreign material mixed with it.

Aids to the Identification of Pollen in a Load

Although the pollen loads from many species of flowers are quite consistent in size and shape, the shape and size of a pollen load is not always a reliable criterion of the kind of pollen contained in it. White clover, for example, is carried almost always in small, kidney-shaped loads while other types of clover pollen loads are almost square. The reason for these differences is unknown, but in some cases the shape of the load may help in a rough way to identify the pollen being collected by the bees. When no pollen loads are seen during a time when flowers are normally in bloom it may indicate that a honey flow may be in progress.



THE DUSTING OF LOOSE POLLEN FROM COMMON FLOWERS.—Pollen may be dusted on special areas of the bee's body due to structural differences in flowers. The numbers and arrows indicate the areas of the bee's body dusted by the flower listed. Drawn from Hodges.

Buttercup 1; Dandelion 1, 3, 4; Hazel 1, 3, 4; Hollyhock 1, 2, 3, 4, 5; Horse Chestnut 3, 4, 5; Lupin 3; Mallow 1, 2, 3, 4, 5; Poplar 1, 3, 4; Sage 2, 5; Toadflax 3; Yew 1, 3, 4.

Disposition of Loose Pollen on the Body of the Honeybee

Under close observation it will be noticed that loose pollen is not always dusted uniformally over the bee's body, instead it may be dusted on special parts such as the head, the abdomen or the dorsal or ventral surfaces of the bee's body. The dusting of these special areas is due largely to the structural differences in flowers, and to the bee's approach to the flower in gathering nectar and pollen. Toad-flax, for example, is visited by bees which are guided by the brightly colored orange lip of the flower to alight just where they can push their way into the flower. The bee seeking the nectar secreted in the spur of the flower brushes its head and thorax against the stamens. In so doing it receives a "plaster" of hard-packed pollen on the back of the thorax. The "plaster" looks much like a dab of yellow paint. As it pushes down into the flower after nectar it may leave some pollen on the pistil of the flower thus effecting self-pollination. Later, in visiting another flower of the same kind the bee may leave some pollen of the first flower on the pistil of the second flower causing cross-pollination.

When visiting a dandelion a bee may be dusted with pollen on its ventral surface because of the fact that the bee walks on the flower while gathering nectar from the florets. On the other hand, nectar-gathering bees may be completely "smothered" with pollen from wind pollinated trees.

Pollen Packing in the Baskets

A young worker or "nurse" bee spends about three weeks in the hive before it becomes a field bee to gather pollen and nectar. When it leaves the hive it may work on flowers that produce pollen and nectar or flowers that produce pollen only. When the flower produces both pollen and nectar the bee will arrive at the flower with its honey stomach empty because she can gather enough nectar to moisten the load as she works. When the bee is working a flower without nectar she will start out with her honey sac filled with honey taken from the hive. The honey or nectar is used by the bee to mix with the dry pollen into a paste-like condition for packing. This mixing of pollen and liquid makes the color of the honeybee's pollen load much different from the color of the pollen seen in the anthers of the flower or that dusted on the body of the bee.

After the bee has become dusted with pollen she leaves the flower and appears to hang suspended in the air performing a number of complicated, quick-moving actions: The tongue is protruded and frequently stroked by the forelegs which become sticky with honey that the bee has regurgitated.

The head and the antennae, and the front part of the thorax are then cleaned of pollen by the antennae cleaners and the brushes of the forelegs. The back of the thorax is cleaned by the middle legs, and the pollen on the abdomen is swept off by the hind legs. This loose pollen becomes moistened with the regurgitated honey which the bee is continually conveying from her tongue with her brushes. Finally, all of the sticky pollen is transferred to the inner metatarsal brushes of the middle legs. Then the metatarsi of the hind legs are held together and the metatarsi

(Continued on page 700)

My Hobby -
Helping City Beekeepers

HARVEY BEVERS, San Antonio, Texas

MORE THAN 25 years ago I bought a colony of bees from a neighbor who needed $6.50 for posts. To my disappointment I found I got only a small handful of bees with a fairly good queen. With lots of feeding and care I was able to secure 25 pounds of honey that season. While telling this fact to a friend in a leading "men's clothing store" of San Antonio, the manager of the shoe department spoke up and asked me if I would like to have another swarm. I replied that I had a half-acre lot and could find room for them. He said his neighbor had a swarm on his front porch, which he wished would leave. It seemed to me if they were there yesterday, they would probably be gone by now. But to reassure me they were still there, he called the maid who told him they had not left.

When I reached the address and found only a cement porch with a stucco balustrade and no bees in evidence I rang the bell, and when the maid opened the door I told her I had been sent to that address to get a swarm of bees, but evidently had gotten the wrong address since they were supposed to be on the front porch. She replied, "Oh no, dere dey is" and pointed to a small hole in the stucco about three feet from the front door in which bees were busily going about their regular duties.

It was obvious that I would need some added equipment to remove the swarm, so I went to a bee supply store and asked for a bee trap. Without a word, the man turned and walked out of the office. Not knowing what to do I waited to see if someone was going to wait on me. Presently he returned with a bee escape and asked if that was what I was looking for? I told him it was. He then asked: "What do you intend to do with it, young man?" So I told him my problem. To my surprise he repeated the same question asked me by the shoe salesman; "Could you use another swarm of bees?"

Thus started a friendship, and a hobby that has grown through the years to where I now care for more than 150 colonies of 50 or more friends of mine, including millionaires, Army personnel, doctors, lawyers, store managers, ranchmen, and even colored people.

A very elderly Negro woman contacted me shortly after I appeared on K.O.N.O. T-V, saying she had a swarm of bees in her kitchen wall. After I removed them, she was so grateful, she said, "I want to give you a bucket of figs when they get ripe," so I am looking forward to fig preserves made with honey before the end of the week.

I care for five colonies in the Alamo grounds, but lost the colony in the wall of the Alamo because of foulbrood, after it had been in one location for over 25 years. So I sealed it off to avoid further infection.

At one time I removed a swarm from Travis Park directly in front of our largest hotel, the St. Anthony Hotel, because the Park Superintendent was removing the tree they had occupied for more than 15 years. Another time I hived a swarm at the Moore Building,

corner of Houston and Broadway (just about the busiest corner in San Antonio). I also removed a swarm from Alamo Plaza, and another from a tree almost in the shade of the Federal Reserve Bank. I obtained a written permit from Mayor Mauermann for that job, and incidentally at present his three colonies are under my care.

I have hived two swarms from the same two-story chimney for an oil geologist, who's wife used the vacuum cleaner to remove them from her bedroom. I also removed a swarm from the west wall of an exclusive rock home in Woodlawn Hills, that would get so hot in the afternoon that the combs began to melt, allowing the honey to run down into the dining room. When I suggested that the maid just set the hot cakes on the window-sill, she protested that Mrs. Wright didn't want that mess in her dining-room. So I obliged, getting a nice tip after I successfully finished the job.

Mr. Bevers capturing a swarm of bees from a bush.

Last week I found a discarded hobby-horse in a back yard in Highland Park, with a colony of bees that had lived in it for more than a year. I've traded for it, hoping to place it in the Zoo at Breckenridge Park, with a big sign, "Don't Steal My Honey."

I will harvest about 6,000 pounds of honey that would otherwise be lost, and the bees do a wonderful job of pollinating fruits and flowers, thus improving the production of both. I distinctly enjoy my hobby and the association with the bees, that will work for you their entire life and feed themselves.

I raise my own queens in a small queen nursery and will use a queen from a colony that has produced 185 pounds of honey this season. I simply kept adding supers as needed and got the above amount. They were in Terrell Hills, an exclusive residential section of the City. The average for this section is 65 pounds per year, over a period of 10 years or more.

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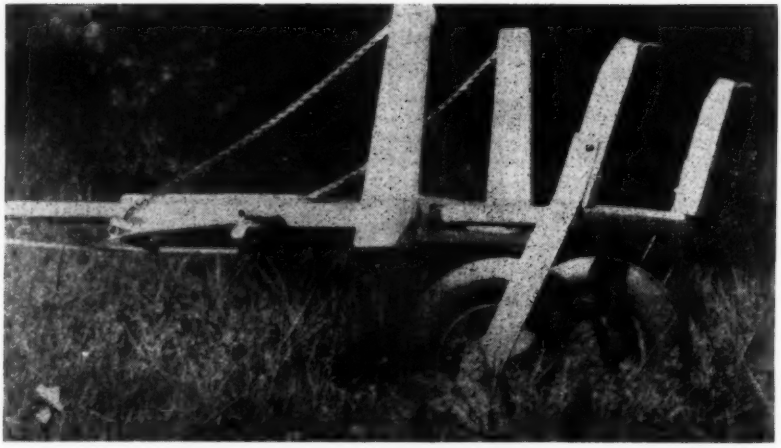
A Handy Hive Lifter

FRODE A. KRUSE, Luck, Wisc.



In this picture lifter is tipped backward on the ground, showing hooks referred to in article.

Supers can be easily lifted off the brood chamber.

THE PICTURES, one, two, and three are really self explanatory. They illustrate a super lifter and transport truck that I have developed and used for a number of years. It is not just the work of one season, improvements were added to it as the years went by.

I find that working in the apiary, with the aid of the lifter, I can do jobs ordinarily done by two men. It's no trick to move heavy hives with the lifter-transport truck. The gripping arms are self-locking, the heavier the load the tighter the grip. It's not much of a lift to place heavy bee hives on a truck platform. All that is needed is a pipe or bar suspended by a chair or other means, a few inches below the truck floor.

When the lifter transport is used for that kind of work, hooks are placed at the tips of the forward projecting

points, at the lifter base. When the lifter is used as a two-wheeled truck, these hooks will be about 22 inches above the ground. The pipe or bar, suspended below the truck floor should be low enough so that the before-mentioned hooks will engage the bar when the lifter transport is pushed under the truck floor. With the hive held at the proper height on the lifter, then a swinging lift will place the beehive onto the truck platform. The lifter will take bee hives off the truck as well as load them onto it.

It is a time and labor saver when I want to lift supers off brood chamber to check on the activities of the queen, or look for queen cells. I use bee escapes when taking off the honey crop, because they are so easy to put on when using the super lifter.

Believe it or not, I have spent over 30 years trying to solve that "back-breaking" job of lifting and handling heavy supers and bee hives full of bees.

Supers being lifted onto a truck.

John Root Joins Gleanings

GLEANINGS IS pleased to announce the addition of a new member to the staff, John Root, as Assistant Editor. John is the great grandson of A. I. Root, who founded Gleanings in 1873. This journal has been published continuously ever since, and it is interesting to note that he will be the fourth generation of Root's to have served on its staff.

His duties with the Root Company, in addition to those on the Gleanings' staff, will include sales work and he will be seen at beekeepers' meetings in the near future.

John has worked with the company at various times through High School and College. A number of the photographs appearing either in the catalog or in advertisements were taken by him as early as 1948. He has worked in the Root apiaries and in the summer of 1953, managed them under the direction of Mr. Deyell. His earlier training also included retail sales and shipping.

John Root graduated from Ohio Wesleyan University at Delaware, Ohio, and received his B. A. degree of Commerce. At the same time he was commissioned a 2nd Lieutenant in the United States Air Force. In 1955, he received his pilot's wings, was later promoted to 1st Lieutenant and flew, as a transport pilot and commander, at the Harlingen Air Force Base where the majority of the Air Force navigators are trained. He returned to Medina in September, 1957.

John Root

A Tribute to the BEES

ORILL L. PEARSON, Chattanooga, Tenn.

I SHALL ATTEMPT to put into words my idea of a fitting tribute to the efficiency, courage, patience, and stability of the bee. No other creature in the animal world is so well equipped for a leading role in the battle of the spoiled against the spoiler. Although she herself is of diminutive size, she can put to rout man, and animals many times her own size. Remember, please, that I am dealing with the characteristics of the bee only, not with the bee industry.

Before I launch into details I would remind you of a few obvious truths: (1) that honey production is, in fact, merely a by-product of pollination, and is therefore of only secondary importance in the design of the Creator; (2) that without pollination no plant can produce a viable seed, a seed that will germinate; (3) that only a few plants are self-pollinating; that others depend on wind-borne pollen; whereas approximately 82 per cent must be pollinated by some mechanical agent, such as the honeybee.

The practical beekeeper is interested primarily in the financial returns he will receive on his investment. This is only natural. However, did it never occur to you that you are indebted far more to the bee than the bee is indebted to you? Do you never think seriously on the so-called impractical, or higher concept of existence, such as cause and effect, which cannot be reduced to dollars and cents? Are there no such things as gratitude and appreciation? For a few brief moments I would direct your attention away from commonplace things to a lofty ideal; from basic habits to a special design; from the honeybee as merely a patient, efficient worker to her role as a benefactor of the human race. Like many other things, we take the honeybee for granted rather than as a special creation of God designed for her great work of pollination, without which man himself could not long survive. Fortunately, the bee has unlocked the secrets of the flower and, by her wizardry, impregnates the female parts of the flower with the life-giving pollen of the male anthers.

Moreover, the loyalty of the bee to her fellow workers, her untiring efforts, her versatility, and her willingness to die that others of her kind might live, may well be emulated by man. Following her example man would be a better citizen, and a better integrated individual. The bee, on the other hand, is not a fatalist like man who resorts to that centuries old solecism, "what is to be will be". No task is too difficult for her; no long hours of patient toil dishearten her. The end justifies the effort seems to be her motto. Famine may overtake her; cold may stupify her senses; heat may threaten her precious stores; and man may disrupt her plans. She meets every challenge with vigor and dispatch. She never uses her stinger needlessly and then only as a last resort. She merits our admiration and respect for a job well done.

The intrepid courage of the bee arouses interest, for example, at swarming time. They voluntarily abandon a comfortable home well stocked with stores to begin life anew in an unfavorable environment and under difficult circumstances, but with sheer determination to carry on. They unselfishly left all behind to those bees who in turn will make the same sacrifice for generations of bees yet unborn. No finer demonstration of communal love has ever been known in the animal world. Such virtues as courage, calmness, resignation are as common to the bees as to man.

Unlike man, the bees are not wasters of time. Each day is lived to the full, each moment devoted to the survival of the swarm. They know intuitively that nothing short of all-out effort will fill the hive with honey. No time is taken out for rest and relaxation when there is work to do. For them, from emergence to death is a one-way thoroughfare, with no turning back when the going gets hard. Victory is her ultimate goal. They are martyrs to a cause and that cause is a battle against extinction—a fight in which time is the determining factor.

Honeybees first made their appearance in the world simultaneously with flowering plants, back in the Cretaceous, or White Chalk Age. Ever since, they have been performing their miracle of pollination. They are precision workers, envied by man, and excelled by none. But why should they not be experts in their field, since instinct is God given: it is built into the bees' nervous system, has an automatic release, and is not volitional. For many centuries, honeybees, in cooperation with man, have been pioneers in the advancement of civilization. Monuments have been erected to great men for their contribution to culture. Why not pay tribute to the usefulness of the bees by erecting a monument to their honor. At least we can show our gratitude for HER contribution to the welfare of society; our own existence depends upon her activities.

There is something pathetic in the life of the aged bee when she has reached the end of her usefulness. The field bee, for example, when her wings become so frayed that she can no longer fan the air, may, on her last homeward flight, fall to the ground and find a grave among the flowers she so much loved. Should she be fortunate enough to reach the hive she will find no glad welcome there since aged bees and cripples are no longer tolerated. She dies "unwept, unhonored, and unsung". I would add this epitath, "Here lies one of the bravest heroines that ever lived".

The ancients entertained a reverential awe for the little bee. Socrates, for example, had a kindly feeling for these industrious little creatures, and thought that earth-bound spirits, such as the spirits of virtuous persons would take, after death, the form of the bee. Aristotle says that the cleanly habits of the bees should receive due praise — but that the bright and shiny bees, the drones, are the idlers. Down through the ages the bee has exerted an influence not only on the lives and customs of kings and queens, but on the lives and customs of the common people as well.

I have endowed the bee with a personality, with the same emotions that would stir the human heart under similar conditions, with the same motives that activate your life and mine. Of course, this is only a figure of speech, but what romance it imparts to the picture! In any event it draws the animal and the human closer together.

"They usually put the fresh things at the bottom."

Tranquilizing Bees with Sound

DAVID H. GRAHAM, Woods Hole, Mass.

RECENTLY MY uncle sent me a clipping of an article on "Reactions of Honeybees in the Hive to Simple Sounds" by H. Frings and F. Little (Science, vol. 125, p. 122, Jan. 18, '57).

According to this article bees produce characteristic sounds while engaged in certain activities. These sounds are received through organs in the legs when in contact with the hive. The authors paralyzed or almost stopped total movement of bees by subjecting them to sounds from an audio oscillator at frequencies ranging from 50 to 10,000 cycles per second and sound pressure from 106 to 128 decibels. The most effective frequencies were between 500 and 800 cycles per second. The bees returned immediately to normal activities when the sound was discontinued.

Bees that were air-borne appeared to be unaffected by the sound. This supports the theory that the bees received the sound through the sound organs in their legs, and the sound at a certain frequency paralyzed these organs. The authors subjected the sound to bees in standard beehives with similar results. With the sound on, the frames were removed and routine handling of the combs was carried on without the conventional use of smoke. The bees remained perfectly still as long as the sound continued.

Since I was preparing an exhibit for a science fair Feb. 27, at the Falmouth High School, I decided to try and duplicate the experiments of these scientists. Before the fair on a warm day I removed a frame of bees from my colony and placed them in an observation hive. The bees in the colony were still in their winter cluster, since it was below 40 degrees. The sound equipment, obtained from the school, consisted of an audio oscillator, an amplifier, and a loudspeaker. I adjusted the loudspeaker two to three feet from the hive and experimented with several different frequencies. The results were fantastic. When the sound was turned on the bees almost completely ceased movement, appearing to be frozen to the comb. Certain frequencies and pressures especially showed a greater cessation of the insects. However, several bees when the sound was turned on continued to run around the outside of the cluster. Possibly a few individual bees can withstand this sound and remain in an ordinary state without becoming paralyzed. The equipment was not the best for this purpose, which might have been responsible for the few bees that did remain in motion.

It is interesting to note that the frame in the observation hive contained a good many cells of capped brood. This is rather unusual for such an early date in the year (Feb. 26). The queen was on this frame and during the night of the science fair to my surprise, she contentedly laid from 10 to 15 eggs. This definitely proves that the bees were not affected in any way after the sound was turned off, for the queen never lays eggs when she or the workers are disturbed or frustrated.

For commercial beekeepers the sound is ideal. Portable sound equipment could easily be obtained inexpensively. It could be attached quickly to the hive, and the time involved in inspecting and handling the frames would be considerably less. The time-consuming task of keeping a smoker going would be abolished. Of course, this would not be reasonable for the amateur beekeepers who enjoy beekeeping as a hobby or sport. The method of handling bees with sound may take a little time to develop among commercial beekeepers, but surely it is practical, and a potential method of greater efficiency in the apiary.

Quebec Hospitality

GEORGE H. REA

Reynoldsville, Pa.

THE QUAINT stone houses and outbuildings with steep straw-thatched roofs and the well-kept fields of that part of the Province of Quebec in which we were traveling that afternoon intrigued us, and we wanted to know more about the thrifty folks who lived there. A well-kept apiary on one of these farms was too much for me to pass by without at least becoming acquainted with the owner. Since we were far from any city with a hotel, I suggested to Mrs. Rea that perhaps these folks might entertain us over night. It would be a real event in our lives.

The very attractive teen-age girl who answered our knock on the door invited us, in almost perfect English, to come in as her mother came into the living room from the kitchen where she might have been preparing the evening meal. She greeted us cordially with smiles and French which we could not understand, but the girl explained that her mother was glad to have us in their home. That we were warmly welcome was evident.

The girl was a charming and efficient interpreter, and we had no difficulty in explaining to the mother that we were on a trip from the United States to Quebec to attend the International Beekeeping Congress.

I was on the program to present a paper on the rearing of queen bees. We had admired their pretty country and attractive homes, had noticed the nice apiary, and had stopped to get acquainted. By this time the daughter had called her father, who was equally warm in his welcome to us. Of course, I had to see his bees, and he and I had a great time examining his well-kept colonies and communicating our thoughts to each other mostly by pointing and gestures. He knew little English, and I was equally ignorant of French. Buckwheat fields were in blossom, and I was surprised to find that the late afternoon honey flow was from this source. It was equally surprising to have him tell me that the buckwheat honey flow was heaviest in late afternoon. This was in sharp contrast with the buckwheat honey flow almost entirely during the forenoon in the great buckwheat honey region of southern New York and northern Pennsylvania.

Supper was a pleasant experience with our genial host family. The food was wholesome and deliciously prepared, mostly smoked ham and vegetables from the farm and garden. While the furniture was plain, it was good and substantial, and the house was meticulously clean. We were delighted to accept their sincere invitation to spend the night with them, and the evening was as satisfying as it was unique in that the daughter patiently interpreted for her parents and for us. She seemed delighted to do so.

Our bed and bedroom that night were examples of cleanliness and comfort even though the floor was bare and there was little furniture in the room. The bed was homemade, and the mattress was a heavy layer of rye straw carefully packed and smooth and covered with perfectly clean linen. The late summer air was cool, but we had plenty of blankets and a good night's rest. The morning meal was the familiar ham and eggs, and at our time of leaving the host and hostess would not take one cent for our wonderful entertainment. What a wonderful expression of good will from newly-made friends in our good neighbor country!

XUM

Pumpkin Pie a la Honey

MRS. BENJ. NIELSEN
Aurora, Nebraska

Honey pumpkin pie and luscious crumb crust—Um!—Photo courtesy Kellogg Co.

"WHEN THE frost is on the pumpkin and the fodder's in the shock," then it is pumpkin-pie time. Indeed, that used to be the time, but with modern improvements in this fast moving world, few of us actually prepare the pumpkin any more. Luscious canned pumpkin is available the year round, and pumpkin pie need not be a seasonal food. Similarly, too many folks also think of honey as a cool weather food —topping for hot biscuits or pan cakes! So let's take these out of the seasonal class, team them up to see what we get!

A variety of crusts adds taste appeal also; nut-treated pastry (¼ cup finely chopped walnut or peanuts baked right in the crust) gingersnap, graham cracker, and cereal crumb ones. And, of course, if you decide on a garnish of whipped cream atop your servings, do sweeten it with honey and a bit of vanilla for added flavor.

Honey Pumpkin Chiffon Pie

Crust: Three cups oven-toasted rice cereal, 2 tablespoons honey, and ¼ cup melted butter.

Crush cereal into fine crumbs. Add honey and butter; mix well. Press evenly and firmly around sides and bottom of 9-inch pie pan. Bake in slow oven, 325 degrees F. about 10 minutes. Cool before adding filling.

Filling: One tablespoon unflavored gelatin, 2 tablespoons cold water, 1½ cups cooked pumpkin, ½ cup brown sugar, ½ teaspoon salt, 2 teaspoons cinnamon, ½ teaspoon ginger, ¼ teaspoon allspice, ⅓ cup milk, 3 eggs, separated, ⅓ cup honey, ½ cup whipping cream, and 1 tablespoon grated orange rind.

Soften gelatin in water. Combine pumpkin, brown sugar, salt, spices, and milk. Cook over low heat, stirring frequently, until mixture boils. Combine with slightly beaten egg yolks. Cook over low heat, stirring constantly, until thickened, about two minutes. Remove from heat; stir in softened gelatin. Chill until mixture begins to set. Beat egg whites until stiff but not dry; add honey gradually and continue beating until whites stand in peaks. Whip cream until stiff; fold into pumpkin mixture together with egg whites and grated orange rind. Spread lightly in crumb crust and chill until set.

Frozen Honey Pumpkin Pie

One baked pie shell, pastry or crumb, 1 cup cooked or canned pumpkin, ½ cup honey, ½ teaspoon salt, ½ teaspoon ginger, ¼ teaspoon nutmeg, 1 cup whipping cream, whipped, and 1 pint vanilla ice cream.

Combine pumpkin, honey, salt, and spices. Fold into whipped cream, then stir into softened ice cream. Spoon into pie shell. Freeze.

Honey Gold Pumpkin Pie

Beat thoroughly with rotary beater: 3 large eggs, ⅔ cup honey, 1 cup pumpkin, ½ cup cream, ¼ teaspoon salt, 1 teaspoon cinnamon, ½ teaspoon ginger, and ½ teaspoon nutmeg. Pour into pastry-lined pan and bake 45 to 50 minutes in 375 degree F. oven.

FROM Foreign LANDS

Translated and Edited by Erika Barth

Problems in Wintering Bees

ANY KIND of work weakens the single bee, however, she normally dies only after she has worked a certain number of days. It is therefore of the utmost importance for the beekeeper to make sure that the work for a bee is kept at a minimum during the winter. The main work of wintering bees is to keep up the temperature necessary for the bees to stay alive. The necessary warmth is achieved by burning up food. Therefore all food consumption means work for the bees, any increase in food consumption means even more work, which in turn shortens the life of each individual bee. This can be a grave disadvantage to both colony and beekeeper. (Defective spring development, shortage of workers during the first honey flow.) Beekeepers must see to it that the bee's need of food during winter is kept to a minimum. Since food consumption is much higher during cold winters, pains should be taken when getting colonies ready for wintering to insure warmth in the hive.

Schweizerische Bienen-Zeitung, July, 1957.

Bees Ejecting Water

FORAGING BEES often eject clear watery drops when flying from a source of food. It has been widely thought that they could remove some of the water from nectar during flight and so begin to concentrate it before reaching the hive. A recent article by G. Mauermayer, published in Germany, quotes evidence to show that this is not the case.

Tests indicate the ejected liquid comes not from the honey sac but from the digestive system; the feeding bee gets rid of the excess water in this way. The contents of the honey sac actually become less concentrated, and the more so the longer the flight. The dilution is due to the addition of glandular secretions which are themselves important in ripening honey.

The New Zealand Beekeeper November, 1956.

Are There Any Advantages in Raising Giant Bees?

AGAIN AND AGAIN bee journals mention the idea of raising bees in larger than normal cells. These bees should be larger than their sisters which hatched from normal-sized cells. These large bees should have a longer tongue and larger wings. They also should be able to carry more nectar which would mean a larger crop for the beekeeper.

There seems to be some truth in this idea. Bees hatched from larger cells really are larger than normal, but the fantastic reports of the Belgian U. Baudoux, a strong advocate for larger cells, about the added length of the tongue surely cannot be correct. At any rate, later inquirers into this theory, among them R. Grout of the U.S.A., could not confirm Mr. Baudoux's reports. They found only a slight lengthening of the tongue. Scientifically it has also not yet been proven that the increase in body size will bring a larger honey crop. In Hamilton, Ill. (U.S.A.) experiments were carried on over a period of years with enlarged cells, no increase or decrease in honey crop was noted.

La Belgique Apicole, November, 1956.

Editorials

Express Rates May Go Even Higher

ON OCTOBER 14, 1957, the Interstate Commerce Commission held a hearing to review a request to increase express rates and charges 15 per cent. Additional hearings on this subject will be held before Examiner John A. Russell, at the places and on the dates named below:

Angebilt Hotel, Orlando, Florida, beginning November 6, 1957.

Hotel Reese-Wilmond, Harlingen, Texas, beginning November 13, 1957.

Federal Office Building, Civic Center, San Francisco, California, beginning November 20, 1957.

U. S. Custom House, 610 South Canal St., Chicago, Illinois, beginning December 9, 1957.

The offices of the Interstate Commerce Commission, Washington, D. C., beginning December 16, 1957.

The hearings will begin at 9:30 A.M. (United States standard or daylight saving time, whichever is observed) on each of the above dates.

The history of this matter involves numerous express rate increases in the past seven years. The group hit hardest by such an increase in expenses would be those beekeepers who buy and sell packaged bees. Express charges on honeybees have already **doubled** in the past seven years, so that now a three-pound package of bees runs at a cost of from $3.25 to $3.50 for distance up to 500 miles. This price approaches the cost of the bees themselves. It seems almost certain that any further increases in express charges at this time would practically eliminate express as a carrier of packaged bees. This would definitely cause a hardship on package-bee shippers who for various reasons find it impractical to use parcel post.

It isn't difficult to understand the need for higher prices in many lines, but the huge increases that have taken place in the express rates on bees are hard to reconcile. Could it be that the express company intends to eliminate the shipment of all bees by this means? If this is their purpose, the public is certainly entitled to some explanation.

If this matter affects you in any way, try to attend one of the hearings listed above. If this is not possible write the Interstate Commerce Commission. The above dates have been changed three times to date. It might be well to write and verify the date before attending.

Wintering Colonies in Shallow Extracting Supers

SOME YEARS AGO we visited a beekeeper in Northern Michigan who used the eight-frame shallow super throughout for brood chambers and supers. This beekeeper had a weak back and could not lift heavy supers. He wintered his 400 colonies in bee cellars, each colony occupying three shallow supers. Some have tried wintering bees in 10-frame shallow supers out-of-doors. We have wintered some colonies in that manner and we know it can be done. During a long cold spell the clusters can move sidewise or laterally between the sets of frames onto fresh combs of honey.

Wintering each colony in a two-story standard hive does give the bees a chance to move sidewise between the two sets of frames onto fresh stores, if the honey directly above the cluster is used up.

There may be a slight disadvantage in having colonies occupy three shallow supers for a brood chamber, namely, there are more combs to handle than would be the case where two standard-depth bodies are used.

It would appear that each beekeeper must decide what type of hive and what method of apiary management is best for his locality.

Honey Crop in Canada and United States

THE HONEY CROP in Canada is estimated at 34,000,000 pounds. This is 10,000,000 pounds above what it was in 1956. Practically all of the honey is white and of excellent quality.

According to a news letter from the Extension Service at Winnipeg, Manitoba, the carry-over of white honey from the 1956 crop has been estimated at 1,800,000 pounds. It will be eight months before the 1958 clover crop is marketed so this amount of carry-over honey should be used by that time. The Manitoba news letter also states that because of the increase in white honey production and the competition from American honey, the Canadian Beekeepers' Council has requested the federal government to establish a floor price for honey and to place an embargo on all imports of honey until domestic surpluses are marketed. No government action has been taken thus far.

A late honey report from Washington, D. C. states that the 1957 honey crop in U.S.A. is estimated at 235,413,000 pounds. This is 10 per cent more than the crop of 1956. The average per colony production this year is 43.5 pounds, compared with 40.2 pounds in 1956.

Honey production this year was higher than last year in all sections of the country except the West where it was down nine per cent, mainly because of the short crop in California. It is interesting to note from the report that ten leading honey producing states produced 58 per cent of the crop. They are, Minnesota, Florida, California, Wisconsin, Iowa, Texas, New York, Michigan, Idaho, and Ohio.

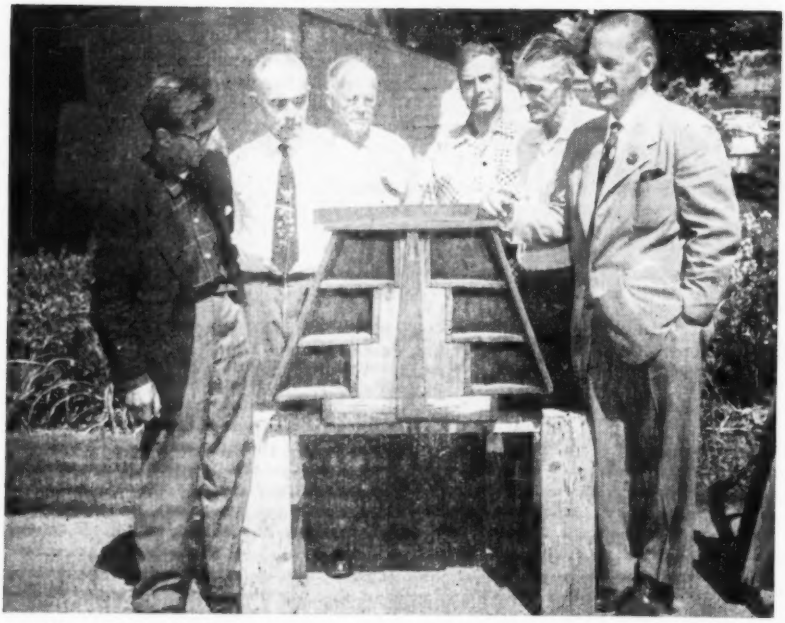
The estimated number of colonies of bees in the United States is 5,406,457 as compared with 5,331,000 for 1956. The estimated amount of honey on hand by producers in mid-September totalled 98,931,000 pounds as compared with 83,460,000 pounds in September 1956. It would appear that there should be no difficulty in disposing of the remainder of the honey crop before the 1958 honey crop comes on the market.

If all the beekeepers and their families would increase their consumption of honey a few pounds per month or year, this would help to dispose of some of the crop. It would be interesting to know how many beekeepers actually use honey in their daily diet. If, perchance, some beekeepers do not have honey on the table each day and are not enthusiastic about honey as a food, they could hardly expect those with whom they come in contact to become enthused about honey.

XUM

NEWS REEL

4-H DELEGATES who competed in Raleigh, N. C., for the state awards in beekeeping recently. From left to right are Billy Sheppard, Aberdeen, N. C.; Patricia Ann Cox, Rollesville, N. C.; Henry Tinsley, Brevard, N. C.; and Martin Mayo, Vanceboro, N. C. (sitting). Our industry needs more 4-H Club members who are interested in beekeeping.



"WHAT'S BUZZIN, COUSIN?"—The annual summer meeting of the Vermont Beekeepers' Association took place August 24, at the home of William Dumour in Bennington. Looking over a European-type beehive are (left to right) Charles Barozzi, Alburg; Clyde M. Wood, Woodstock; Jerone Tennien, Pittsford; Charles Mraz, Middlebury; Robert Mead, White River Jct., and Dr. Herman N. Sanders, Candia, N. H. Dr. Sanders gave the main talk, entitled "Bee Stings Are Good For Arthritis."

LIEUTENANT GOVERNOR RECEIVES SOME BLUE RIBBON HONEY.—Reading from left to right is Colie Erwin, Secretary of the Missouri State Fair; John S. Williamson, Commissioner of Agriculture; Lt. Governor Long, and Walter Matthes, producer of the honey.—Photo by Dickey's Studio, Official Missouri State Fair Photographer, Union, Mo.

SIR EDMUND HILLIARY, who climbed Mt. Everest is being presented some Imperial Bee Honey.—Photo by National Publicity Studios, New Zealand.

Live and Learn

by Propolis Pete

THIS IS the first year in a long time that I have not been called ten or a dozen times during the spring and summer to come and get swarms of bees. To make things different, I was called five times during September. Can you tie that?

One of them really was a swarm. The others were either bumble bees or yellow jackets. The one that really was a swarm had taken possession of an enormous tree right by a driveway, with the entrance about three inches above ground. When the bees flew, they went right across the driveway at about face level, much to the discomfort of the inhabitants. A bug bomb took care of the entrance and then a dust gun with six per cent chlordane filled the cavity so full that the dust came out in half a dozen places that you would never dream were connected in any way with the entrance.

I hate to kill a colony of bees for any reason, but that was the only thing that could be done with this one, short of taking down a tree that served a useful purpose otherwise. The tree was hollow, but seemed strong enough and it had lived through plenty of big winds.

The case of the bumble bees was really funny. A frantic telephone call from a distressed lady brought me out in a hurry. It seemed that she was having a new heating plant put in, and the workmen all quit because the cellar was so full of bees that they couldn't move around. Well, when I got there I found four bumble bees batting their heads against the window, trying to get out. It seems that the lady had seen them flying from a hole in the ground a few feet away from her front porch, and had stopped up their entrance with a big stone. She was such a little lady, and it was such a big stone, that sheer desperation must have given her the strength to move it into place. To make her feel better, I sprayed my bug bomb around a little. She was so grateful that she wanted to pay me, but I told her to go to one of the stands where they sell my honey and buy some. After all I didn't do a darned thing but give two squirts of my bug bomb.

Another lady called very excitedly that there was a big swarm of bees in back of her house. I told her that I was not interested in swarms at that time of the year, but she painted such a rosy picture of the size of the thing that I went for curiosity. Yep, you were right the first time. It was an itty bitty nest of yellow jackets, way back behind her garage, where she would not have known about it at all if she hadn't tried to cultivate the ground around it. I told her to let the weeds grow, and the yellow jackets wouldn't bother her.

I was really fooled on one colony of yellow jackets. I have never seen them build their nests anywhere excepting in the ground, or near the ground in a bunch of grass or leaves. These had selected a hole in this lady's house, up under the eaves and near the chimney. There was a whole slew of them too, and they were dancing back and forth in front of the entrance just like honeybees. They looked small though, and as I went up the ladder I began to suspect that it was another false alarm. As usual, it was one of those places where you have to climb a ladder, and then twist yourself into a knot to get into position to squirt the bug juice at them. However, I did and as they began to drop, one of them went up my sleeve. If you are interested in seeing how fast lightning really is, you should have seen me shake that baby out of there. He or she (I don't know much about yellow jackets) didn't even get a chance to unwind his stinger before I had him out of there.

I couldn't reach the entrance hole to get the nozzle of the dust gun down into it, so coated the entire area for a foot around with a thick layer of the dust. They had to walk through it to

(Continued on page 701)

Law-Breaking Bear Scatters Bee Hives, Tears Down Warning Sign, Escapes Hunters

From Peterboro Examiner, November, 1953.

Marauding bear played havoc with the bee hives near Bobcaygeon, Ontario, owned by H. G. Burke of Omemee. Although the bear did considerable damage and ripped down his reward sign, Mr. Burke admitted a certain admiration for the bear who evaded a group of hunters.

IT'S A KNOWN fact that bears and honey like to get together, but it seems that there is one bruin at least, who not only is mad for the bee juice, but also has an active distaste for anything representing law and order.

The apiary of H. G. Burke, Omemee, was visited by this nasty bear recently; the hives were wrecked, combs of honey demolished, and debris scattered all about the yard. This was natural enough, but further evidence proved that the bear was a hardened law breaker.

$25 Reward

A sign which had been nailed to a tree in the yard, and read to the effect that $25 would be offered to anyone leading to the capture of any marauder found stealing or destroying property in the yard had been torn down. Deep claw marks were found in the sign.

Brer bear was obviously a literate chap.

A hunting party was formed and a trap was set. Bears could not resist meat, it was said, so some meat was purchased and spread about the apiary. Then the hunters began the long vigil.

After Honey

The bear came, but not because of the meat. He started into the honey again, and was gorging himself happily when the hunters flashed on their car lights. They started firing, but the bear, full of that natural energy food, took off into the nearby bush without delay.

Before morning he was back to the yard and finished his tasty meal.

The Burke apiary has since moved to a new location.

XUM

Let's Talk about Honey Plants

DR. HARVEY B. LOVELL
Louisville, Ky.

Boneset Eupatorium perfoliatum

POVERTY-WEED (**Iva axi'laris**). The Chrisman Brothers of Fresno, California, have several cans of honey from poverty-weed which they had obtained the previous season. The honey is bright yellow with a fair flavor, rather stronger than honey from legumes. The honey has crystallized. This plant is also called deathweed because of its ability to crowd out all other plants in its vicinity. It has small greenish-white flowers in small nodding clusters. It does not seem to be mentioned in any book on honey plants.

Fir sugar. Mr. Lee Halstead takes his bees into the high Sierra Nevada Mountains after the honey flow in the San Joaquin Valley of California is over, usually about the first of August. He gets his locations from the forest service in the National Forests and is careful to space beekeepers several miles apart. In the fall he obtains a nice flow of a sweet secretion from Douglas fir which it is generally agreed comes from the tips of the needles and not from insects. This secretion sometimes called manna has a pleasant, distinctive flavor. It is amber in co'or, and makes a pleasant change from the milder legume honevs. This extra crop often makes the difference between a fair and good season for Mr. Halstead. He also leaves his bees in the mountains for spring build-up from such mountain shrubs as manzanita and mountain mahogany. He has to be careful not to get too close to a stand of California buckeye, the pollen of which wiped out 300 co'onies for him in 1950.

Coffeeberry (Rhamnus californica). One spring Mr. Halstead made considerable honey from coffeeberry which he bottled separately. Although amber in color it had a pleasant flavor and he found that it was very popular with his customers and outsold his white honey. People came back repeatedly for more of it.

Boneset. Bill Friend of Warsaw, Kentucky, sent me a cluster of this plant recently with the following comment, "The white flowers are found in full shade and our bees are working them now in preference to our blue asters." All the bonesets, of which there are five or more species in eastern United States, are attractive to bees and occasionally yield a surplus of fair to good honey. The common boneset (**Eupatorium perfoliatum**) is best known and probably yields the most nectar, although the fall boneset (**E. serotinum**), which blooms in August, is very valuable for stimulation at a time when honey plants are scarce in many states. The species sent by Mr. Friend is a very attractive white-flowered form (**E. rugosum**) often called white snakeroot or white ageratum. In my own yard a patch of these flowers failed to attract any bees.

Sunflowers. Bill Friend also sent in a specimen of wild sunflower (**Helianthus strumosus**) with the comment that his bees were working it too and apparently obtaining a worth-while amount of nectar. Sunflowers are widely recognized as honey plants but rarely yield a surplus, perhaps because they usually bloom at a time in the fall when there are many competing species which bees find more attractive.

Canada. I have reports of surpluses from Winnipeg, Manitoba, where A. V. Mitchener writes that cultivated sunflowers produce a yellow honey with a good body and a rather strong characteristic flavor.

Missouri. Lee C. Worth, Van Buren, reported that at one time several years ago, farmers planted considerable acreage of sunflowers for seed, and that he harvested a nice crop of section honey which had a golden yellow color and a heavy body. Although the honey had a pronounced odor and flavor reminiscent of sunflowers, customers liked the taste and bought up the sections rapidly.

Florida. Around Lake Okeechobee in late fall and early winter sunflowers may yield as much as 200 pounds of honey which is amber-colored with a good body according to John W. Rabb. The chief species in the Everglades region is **Helianthus floridius.**

Texas. Clay Eppley writes that in Eastern Texas sunflowers formerly produced an amber, yellow honey with a rather poor flavor which granulated quickly. His largest surplus was 100 pounds but intensified cultivation and weed sprays have greatly reduced sunflowers in his area.

Sunflowers have been unusually common this fall due to the rainy weather in many parts of the country. Anyone obtaining a surplus please write and give me the details.

WALT DISNEY'S True Life Adventures
BEE HELPS BEE.
A HONEYBEE WOULD LIKE TO GET AT THE NECTAR DEEP IN THE HONEYSUCKLE FLOWER... BUT HE CAN'T REACH IT; HE HAS NO CUTTING JAWS.
A WANDERING BUMBLEBEE BITES A HOLE IN THE COROLLA OF THE BLOOM, SAMPLES THE NECTAR, AND THEN FLIES AWAY....
...LEAVING THE BULK OF IT FOR THE HONEYBEE.

From The Cleveland Press, Thursday, Sept. 19, 1957.

XUM

A Talk to Beekeepers

M. J. Deyell

With Special Reference to Beginner Beekeepers

"Ignorance never settles a question"
—Disraeli

HAVE YOU ever felt as though you knew practically nothing? That's how I feel sometimes about bees and beekeeping. The longer I work with bees, the less I know about them, or, perhaps I should say, the more I realize how much there is to know about them. Some beekeepers seem to think they know a lot about bees when actually they don't know how much they don't know. Others know a few things about bees and at the same time realize how comparatively little they know about them.

The Young Chap Who Knew It All

A few years ago during a summer bee meeting here in Ohio an experienced beekeeper had given a talk on some phase of beekeeping. A young chap with very little beekeeping experience broke into the discussion following the talk and made some statements that were not in line with the ideas expressed by the speaker, nor the rank and file of experienced beekeepers present. The young chap had a perfect right to express his opinions. However, the experienced beekeepers did not attempt to contradict the statements made. They probably thought that if the young chap continued to keep bees that he would be wiser after ten years' beekeeping than he was during that meeting.

Opinions versus Facts

It is perfectly in order to express opinions but to make a statement that is alleged to be a fact obviously requires proof.

In the realm of honeybees some statements that were thought to be facts some years ago are no longer considered so. For example, some years ago some beekeeping authorities mentioned a virgin queen mating only once. At present, competent scientists who have delved into this matter tell us that a virgin queen may mate more than once and as many as six or seven times. However, Francois Huber the naturalist who was born about 200 years ago stated that an unmated or virgin queen may mate more than once. Obviously Huber was a couple of centuries ahead of his time.

It seems to be the general concensus that a queen does not mate with a drone after she begins to lay eggs. Is it possible that in the future it may be found that a laying queen does mate after she begins laying eggs? I am getting into deep water and so I'll let the scientists settle this.

As we attend meetings here and there over the country we find a considerable diversity of opinion on matters pertaining to the beekeeping industry. I occasionally ask myself "What is truth"? I do think there should be something approaching a unanimity of opinion concerning methods of handling bees for maximum results in honey production. With all the present methods advocated the beginner is likely to become confused. We should work towards a simplification of apiary management to fit the needs of beekeepers in various sections of the country.

Differences in Seasons

If all seasons were alike, the work of planning apiary work in advance would be simplified. As a matter of fact no two seasons are exactly alike. Perhaps that is what makes beekeeping so interesting. We never know what is around the corner.

For examlpe, last year in this vicinity we had a cold September and very little nectar was gathered from goldenrod. This year we had some hot weather during September and bees stored a considerable amount of surplus from goldenrod. Last year our fall flow in this vicinity did not begin until about October 1st and continued until October 16th. During that time the bees filled their brood chambers and stored some surplus. Today is October 10 and unless we have some warm weather during the next week or ten days the

bees will not store much honey from aster. However, if we get some warm days, aster honey will pour in. One year I had an apiary that put up 75 pounds of surplus aster honey from October 1 to October 15. Prior to October 1 I had visions of buying a considerable amount of sugar to feed the bees for winter.

Don't Tinker with Colonies too Much in the Fall

I have mentioned this in previous talks. It seems that the bees arrange the honey and pollen in their brood chambers during the fall months to their liking. Pollen is stored in cells adjacent to the brood and as the brood emerges, more pollen is stored. It will be noted that these cells of pollen are about half filled. The bees may then store honey on top of the pollen. They are doing exactly the right thing, because early in the spring as the bees use some of the honey in the cells of the brood chamber the pollen in the bottom of the cells is available for the bees to use in brood rearing. During cool rainy weather, when bees cannot fly out of the hives to collect fresh pollen, they are likely to use the stored pollen in the combs and thus brood rearing continues normally.

Some beekeepers may wonder if the bees will use the large amount of honey found in brood chambers at this season of the year where there has been a good fall honey flow. There may be a tendency on the part of some beekeepers to remove some of these combs of honey in order to increase the amount of surplus honey obtained. Generally speaking, this is a mistake, because during the early spring months bees use a large amount of honey and pollen for brood rearing. It is estimated that one comb of honey is required to produce one comb of brood and one pound of pollen is needed to produce one pound of bees. The honey and pollen are converted into bees that are needed for collecting fresh nectar and pollen.

It is a mistake to interchange combs in the brood chamber during the fall months. This spoils the arrangement of food in the brood chamber and in some instances may result in the loss of the colony during the winter months.

Most beekeepers nowadays winter bees in double-story hives, usually called food chamber hives. The upper

A snow fence to the North and West of apiary breaks the force of the cold winter winds. — Picture furnished by Marvin W. Kosanke, Ripon, Wisconsin.

XUM

chamber should be quite well filled with sealed honey. There should also be some honey in the lower chamber. The bees will form a winter cluster, with the center of the cluster between the two sets of frames.

How Bees Winter —the Winter Cluster

Not all beekeepers are familiar with the manner in which bees live through the winter in the North. We have asked some beekeepers in northern latitudes how their colonies managed to live during the very cold spells of winter. Their reply in general was, "I guess they just huddle together to keep warm".

The honeybee is a cold-blooded animal, which means that its body heat is the same as the air that surrounds it. It is necessary that the bees cluster in order to generate some heat by muscular activity during the cold winter months.

The following by Dr. C. L. Farrar, Head of the Bee Culture Field Station at Madison, Wisconsin, from his circular No. 702 entitled "Population Management of Honeybee Colonies in the Northern States", should help to answer this question:

"The cluster protects itself from external temperatures by forming an insulating shell of bees one to three inches deep to conserve the heat produced by the more active bees in the center of the cluster. The cluster contracts as the air temperature falls, reducing the surface exposed to radiation and increasing the concentration of bees to produce heat energy. A temperature is maintained in the center sufficient to conduct heat to the surface bees so that their temperature will not drop below approximately 45 degrees F., although the temperature in the hive a few inches outside the cluster may fall to zero or below.

"Hive insulation allows the cluster to contract more gradually when there is a sudden drop in the external temperature and gives it more time to organize its position in relation to the stores, so that fewer bees are left stranded. The cluster does not heat the unoccupied space in the hive. During a protracted cold period the temperature of this space will become almost as low in the packed as in the unpacked hive. Too much packing will prevent the colony from responding to warm periods during the day, which would allow the cluster to shift its position on the stores or even allow the bees cleansing flights.

"The cluster itself must protect the colony against low temperatures and the organization of the colony in relation to its food supply will determine whether or not it winters in good condition."

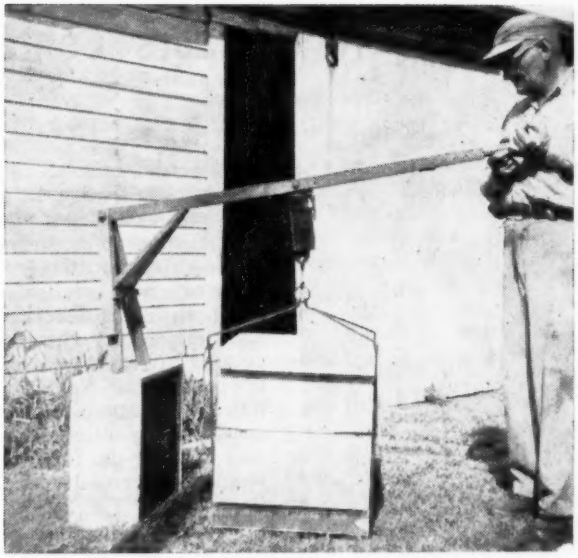
It should be said in connection with the foregoing, that the winter cluster moves up slowly during the winter, as the honey in the combs on which the bees are clustered is consumed. It is very necessary therefore to have an abundance of honey in the combs above the cluster so that the bees may not starve during the winter.

I Learn about the Winter Cluster While Hunting Rabbits

I have related this experience in a previous talk, but it will bear repeating.

During recent years I have read bulletins and everything I could find on the winter cluster. However, I wanted to see the inside of the cluster. About a dozen years ago in late December, while hunting rabbits, I came onto a Root Company apiary. The colonies occupied single-walled double-brood-chamber hives. The day was quite cold, a little above zero. I assumed that the winter clusters would occur on the center combs in the upper portion of the lower story and extend into the lower portion of the combs in the upper story, with the center of the cluster between the two sets of frames or combs. I decided to investigate, so tipped the upper story up off the lower story. In doing so I split the winter cluster in two and then and there I saw, for a few moments, the lower hemisphere of the cluster. The bees on the outside of the cluster, or periphery, were practically motionless, while the bees in the center were slowly moving about and fanning their wings. In a few seconds the bees on the outside of the cluster were mingling with the bees on the inside and vice versa.

I opened another hive in like manner and saw identically the same things I



Some beekeepers weigh each hive in the fall. This is a good idea. Vic Harris, St. Louis, Michigan, does it.—Photo sent by E. C. Martin, East Lansing, Michigan.

had seen in the first hive I opened. This coming winter I would like to get a close-up photograph of the lower half of a winter cluster. To do this it will be necessary to have the photographer place his camera on a tripod close to the hive and have him ready to shoot just as soon as I lift the upper hive off, in order to see the inside of a winter cluster of bees. The winter cluster is a marvelous phenomenon.

Period of Quiescence

By this we mean that during the early part of the winter—November, December, and most of January in this and northern latitudes, bees are comparatively quiet and do comparatively little work. Most queens stop laying for a few months. Occasionally a queen introduced late in the fall may continue laying a few eggs even during the period of quiescence. The bees consume enough honey to keep alive and apparently avoid unnecessary activity. When a good flight day comes, the bees will fly out of the hives, especially if they have been confined for a time.

We have found from our scale hive records that during December and January the hive loses approximately four pounds per month. As spring approaches, the amount of weight loss increases.

Last Care of Bees for Winter

Some beekeepers in the North use heavy packing cases for their colonies during the winter with suitable packing material placed between the hives and the cases. Other beekeepers wrap their hives in black building paper, leaving a small opening adjacent to the lower hive entrance for bee flight. Some beekeepers use no packing whatever but aim to have their colonies very populous in the fall and well supplied with an abundance of stores of good quality. Most of these beekeepers have a middle or top entrance for bees to use during the winter when suitable flight days occur and they have their hives well sheltered from the prevailing winter winds. It is essential to use entrance reducers to keep mice out of hives.

In the far North where long protracted cold spells occur it seems necessary to apply winter packing or insulation to hives. Some northern beekeepers winter in a bee cellar.

It would seem that different sections of the country require different methods of wintering. My suggestion is that if you are having success with your present method of wintering, stick to it and do not experiment on too large a scale with other methods.

XUM

Southern States Beekeepers' Conference

By Jack Deyell

THE 29TH annual convention of the Southern States' Beekeepers' Federation, held in Winchester, Virginia, October 2nd to 4th, will go down in beekeeping history as one of the best meetings ever held. Winchester, nestled in the beautiful Shenandoah Valley, the Apple Capitol, was an ideal spot for beekeepers to meet and to enjoy real Southern hospitality.

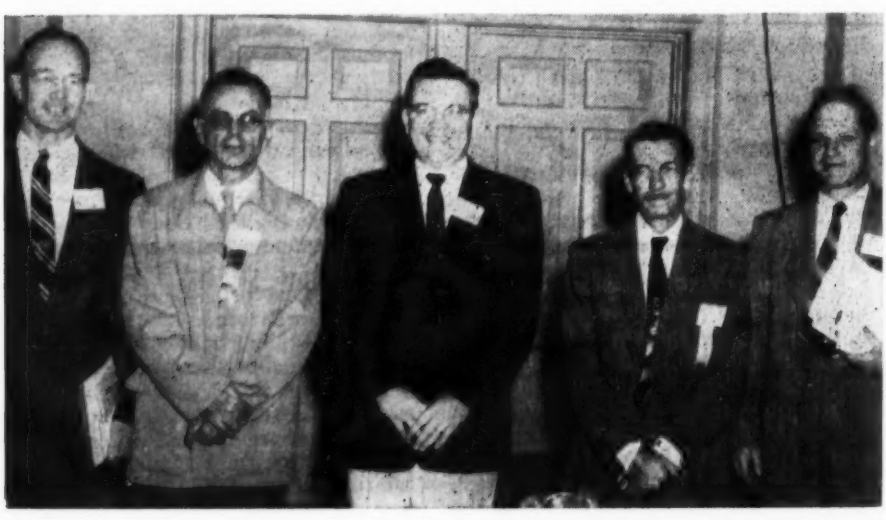
The weather during the meeting was all that could be desired and the attendance, over 200 beekeepers from 22 states, gave the program committee the assurance that the work and planning that went into the meeting was justified.

The afternoon of the first day was devoted to visiting some of the historic spots and the great apple orchards in the beautiful valley. A goodly number of beekeepers arrived at the meeting place, the George Washington Hotel, the first evening in time to enjoy some movie films on research in various phases of beekeeping.

On the morning of the second day, President W. A. Stephen, Raleigh, North Carolina, after calling the meeting to order introduced Mayor Smaltz, also senator Harry F. Byrd, Jr., both of whom extended a warm welcome to all the guests present.

Mr. Stephen in his welcoming address reviewed briefly the history of the Southern States Beekeepers' Federation, also mentioned the fourfold aim in coming together, namely, to have an opportunity to conduct business essential to the organization, to receive instruction. to obtain some inspiration, and to share the fellowship of men and women concerned with making a living from bees.

Mr. Stephen showed a map of the United States indicating where the bees are located in the various groups of states. During the past few years beekeeping has declined in a number of the states. However, colonies of bees have increased in California and Florida. California is up over 19 per cent in the last decade while Florida has increased about 37 per cent. All states in the Southern Federation are importers of honey with the exception of Florida and Georgia. Florida is the only



Left to right: W. A. Stephen; H. L. Maxwell; Harvey York, Jr., the new President; Ralph Wadlow; A. D. Hiett.

state which needs to look outside its own boundaries for markets.

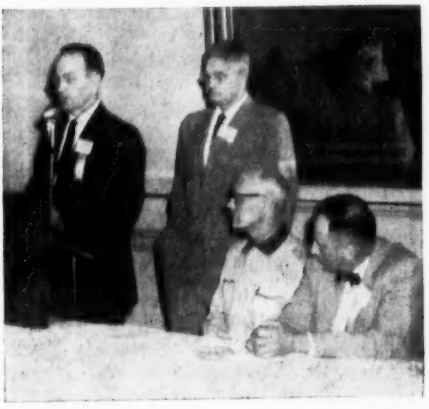
A recent national survey showed that only 6.2 per cent of our total population uses honey. This means that there are more than 92 people out of every 100 who never use honey. We should interest 4-H Club Agents in the various counties throughout the country. It is necessary to enlist the interest of young people in beekeeping in order that more bees may be kept, to meet the demand for bees to perform the necessary pollination of farm crops, also to save some of the enormous amount of nectar that goes to waste each year for the lack of bees to gather it.

The average consumption of honey in the United States as a whole is 1.4

James I. Hambleton, Chief of U.S.D.A. Beekeeping Division.

pounds per capita. This is alarmingly low and should be raised to a higher level.

James I. Hamb'eton, the head man of beekeeping in our country, in an inspiring address on how nature uses the honeybee for perfect pollination was optimistic concerning the future of our industry. He said that beekeeping has not yet started and that beekeeping is better than other kinds of business.



Left to right: W. A. Stephen; Bob Dadant; L. B. Shearman; Merle Fisher.

A beekeeper can take time off when he wants to because bees feed themselves during the owner's absence. People who raise poultry or farm animals have to stay at home to feed them or get someone else to do the work.

It has been found that bees may not always visit nectar plants near their hives but may fly to fields some distance away. Placing some hives of bees near an orchard or a field of clover to be pollinated doesn't always insure thorough pollination. There should be

W. A. Stephen, Senator H. F. Byrd, Jr., standing.

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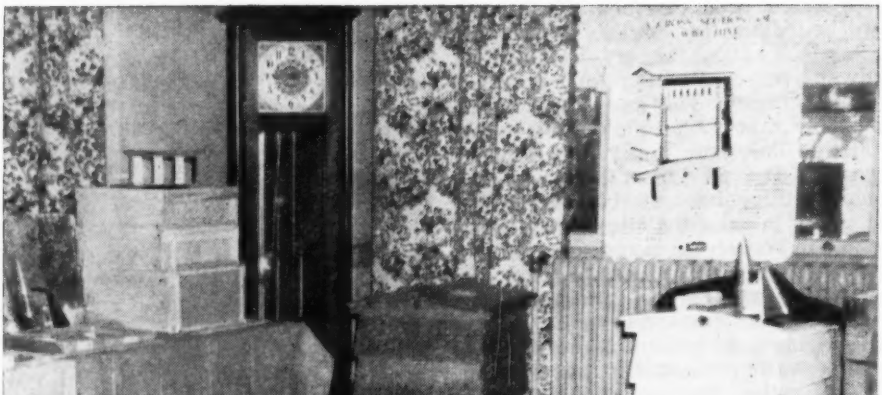

P. E. Roundy, Warwick, Virginia, had a display of English hives and bee equipment that attracted considerable attention.

hives of bees scattered over any area for maximum pollination of farm crops.

Concerning greater consumer interest in honey Mr. Hambleton said that if every school had a glass hive of bees we wouldn't have to worry about honey sales.

Panel Discussion on Package Bees

This was moderated by Harvey York of Georgia. Package bee and queen shippers have their difficulties. It is hard to get good reliable help and it is necessary to keep skilled help the year around, even when there is not much to do during the winter months, in order to have these men when they are needed.

Material like sugar, also metal and lumber for queen and shipping cages, are high in price. Changeable weather in the spring when queens are reared, also cold spells, present a problem that in some instances is almost insurmountable. Southern shippers have to be optimists in order to remain in business. (Northern beekeepers could not get along without southern queen and bee shippers.)

Installation of Packages and Queens

An extremely interesting panel discussion on this topic was moderated by **Robert Dadant** who substituted for G. H. Cale, Editor of American Bee Journal. It would appear that there are almost as many methods of installing packages as there are beekeepers. Each beekeeper thinks his method is good. Lloyd Shearman of Maryland likes the three pound package and prefers to receive packages in early April by express. Most beekeepers like to receive the queen caged in the package, to be released by the bees after the package is installed. Irvin Stoller of Ohio likes to have the queens loose in the packages. When introducing a queen to a queenless colony he uses a small portion of peppermint mixed with water which is sprinkled on the bees just before a queen is introduced and claims to have successful introduction.

Members of the panel were in agreement that packages should be received and installed reasonably early in the season, in time to build up into colonies that will store the maximum crop.

Seated: A. D. Hiett and W. A. Stephen; speaking, Mrs. Harriett M. Grace.

also that a method of installation should be used that will help to insure having queens released, without too much delay, so that they can start laying soon after being put into hives.

Harriett M. Grace, Director of the American Honey Institute, Madison, Wisconsin, gave an excellent talk on the work of the Institute. Releases on various uses of honey are made available to newspapers and home economists over the country.

The Institute which had its inception in 1928 has steadily increased its scope of service through the intervening years until it has become a very essential part of our industry in creating and increasing consumer interest in honey.

Due to the fact that I appeared on the program for beginners and amateur beekeepers, scheduled at the same time that R. B. Willson talked on royal jelly and H. L. Maxwell on insecticides, I did not hear these speakers but understand that their talks were well received.

The honey auction conducted by George Vest, at the conclusion of the afternoon program, resulted in a substantial amount of money being raised for the American Honey Institute.

The beekeepers' banquet in the evening, toastmastered by the inimitable Harold J. Clay of Washington, D. C. was a huge success. The program consisted of instrumental and vocal music, also extemporaneous remarks by some of the celebrities present who did not appear on the regular beekeeping program.

W. J. Nolan, just recently retired from the Section of Bee Culture Research, Beltsville, Maryland, received some well-deserved recognition from James I. Hambleton, for the outstanding contributions he has made to the beekeeping industry during the years. Mr. Nolan and wife were presented with gifts which expressed the esteem in which the Nolans are held. Mr. and Mrs. Clay also received gifts as a token of the appreciation of the group for the valuable service Mr. Clay has rendered, not only to the Southern States' Beekeeping Federation, but also to the beekeeping industry at large during his many years of service. The banquet was a joyous occasion that will linger long in the memories of those who attended.

The following morning **Ralph Wadlow, President** of the Florida Beekeepers' Association, gave an interesting and enlightening talk on beekeeping in his state. Florida now has 238,000 colonies of bees and holds third place among the states in honey production. The investment in bees amounts to approximately $9,000,000.

George J. Abrams of Maryland talked on the grading of honey, also some of the difficulties encountered because of the many different colors and flavors of honey throughout the country. However, considerable progress is being made.

After the business session and election of officers, President W. A. Stephen handed over the gavel to the new president, Harvey York of Jesup, Georgia.

The new Vice president is H. L. Maxwell and the new Secretary-Treasurer, Ralph Wadlow, to succeed A. B. Hiett who has rendered such valuable service to the Southern Federation during the years. H. L. Maxwell and program committee are to be complimented on the work they did to make this meeting such an outstanding success.

Plans at present are to hold the next Southern States' Beekeepers' Federation meeting in Tampa, Florida, in 1958.

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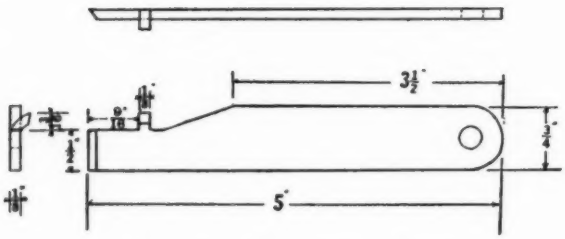
A New Tool



Here is a new tool for cleaning the grooves of thin top bars on shallow frames.

THIS TOOL was sent in by Mr. W. W. Drake of Morgan, Texas. Its express purpose is to clean wax from the grooves of thin top bars on shallow supers. Mr. Drake also claims it's very handy for removing wax from between two-piece bottom bars.

To operate, ho!d the tool so that the width is flat against the top bar, the length is perpendicular and the spur is projecting into the groove.

If you feel you could use a tool of this kind, make one from the drawing. Then after you have used it, let Mr. Drake know if you find it to be satisfactory.

THE TIME I BROKE THE LAW

H. H. ROOT, Medina, Ohio

DURING THE LATE years of the war when sugar was rationed, I called on an extensive beekeeper in Ohio. He was an advocate of Caucasian bees and I was glad to accept his invitation to visit a number of his yards. I drove about 75 miles and took a number of pictures which were subsequently printed in Gleanings.

What was not printed was this story: Before we started home, while I was talking with the beekeeper's wife in front of the house, Mrs. Root, who had started for the car, noticed a good many sacks of sugar in a shed and in fun remarked to Mr. B. that with all that sugar on hand, he ought to spare her a sack for she was short of sugar for canning.

When we reached home that night I wanted something out of the trunk of the car and was amazed to discover a big sack of sugar. I asked where it came from and Mrs. Root replied innocently, "Why, Mr. B. gave it to me".

All through the war, we had been giving beekeepers advice regarding the proper way to apply for sugar to feed bees for preventing winter loss. Here I was with a 100-pound sack of sugar which could be called by several different names. What inspector, had he found the sugar, wou'd have believed that I did not know it was in the car?

Adam, though equally guilty, blamed his fall on his wife. I won't blame my wife, for to this day, she thinks that she and Mr. B. just played a little joke on me. It would not have been a very funny joke if we had been caught.

American Beekeeping Federation Meeting

The Governor and Mrs. William O'Neil are being presented with a section of comb honey by Mrs. Alan Root for use on their biscuits to help set the mood for the National Beekeepers' Association's meeting in Columbus in January. Mrs. O'Neil has invited the ladies of the convention to hold their tea at the Governor's Mansion. The ladies will enjoy meeting the very genuine and charming Mrs. O'Neil.

THIS NATIONAL meeting will be held in Columbus, Ohio, at the Neal House, January 27-31, 1958. The Convention theme is to be, "Industry Wide Cooperation". Other topics that will receive prominent attention will be the Check-Off Plan, Advancements in Research on Royal Jelly, Marketing and Promotion under the direction of C. D. Floyd and Research by Clarence Benson.

The hobbyist beekeepers will have a place on the program, also there will be an interesting program for the ladies.

One of the highlights will be the banquet on the evening of January 31. Columbus is easily accessible from North, South, East, and West, so plan to attend the National meeting. Further publicity on this meeting will appear in near future issues of Gleanings.

National Honey Show to be Held in Florida

The **National Honey Show,** sponsored by the American Beekeeping Federation, will be put on by the Florida State Beekeepers' Association at the Florida State Fair in Tampa, Feb. 4 to 8, 1958. This show will offer a fine chance for beekeepers to help their own cause by displaying their product before people from all over the country. No other fair has such a large percentage of out-of-state attendance as does the Florida State Fair. No matter where you live, people from your area will be there, and will be interested in seeing how "honey from home" compares with that on display. The Fair is providing space, premiums, and attendance, and it is up to you to provide the honey.

Lists of premiums and rules of the Show are available from Fred Oren, Superintendent, Honey Department, Florida State Fair, Tampa, Florida or American Beekeeping Federation, Cannon Falls, Minnesota. The rules are essentially the same as other years, with the exception that entries will not be returned unless requested by the exhibitor. Those not returned will be sold to the best advantage and money obtained turned over to a worthy beekeeping cause. — Millard Coggshall, Minneola, Fla.

XUM

Concerns Participating in the Check-Off Plan From September 1, 1955 Through August 31, 1957 Who Have Purchased Stamps

R. B. Willson, Inc.
250 Park Avenue
New York 17, New York

Superior Honey Company
P. O. Box 1007
South Gate, California

Morton's Quality Foods
6333 Denton Drive
Dallas 1, Texas

T. E. Burleson & Son
Waxahachie, Texas

Old Taylor Honey Company
L. D. Taylor
Harlan, Iowa

Rocke Apiaries
Eureka, Illinois

Kane Import Corporation
10 East 40th Street
New York 16, New York

Jack Gomperts & Company
Mr. Ken Golding
110 Market Street
San Francisco, California

B-Z-B Honey Company
361 East Valley Blvd.
Alhambra, California

Lose Brothers
204-206 E. Jefferson Street
Louisville, Kentucky

R. W. Barnes & Sons
P. O. Box 114
Oakland, Nebraska

H. F. Botsford & Company
Bell Avenue
Carnegie, Pennsylvania

Clearbrook Honey Farms
George McReynold
Clearbrook, Minnesota

Superior Honey Company
349 Third Street
Ogden, Utah

Superior Honey Company
Ralph J. Stone, Manager
P. O. Box 3546
Phoenix, Arizona

Champlain Valley Apiaries
Charles Mraz, Manager
Middlebury, Vermont

R. D. Bradshaw & Sons
P. O. Box 337
Wendell, Idaho

Clover Bloom Honey Company, Inc.
Glenn Gibson, President
P. O. Box 276
Minco, Oklahoma

Howard Honey House
Vernon G. Howard, Proprietor
4170 S. Howell Avenue
Milwaukee, Wisconsin

Weaver Apiaries
Roy S. Weaver, Jr.
Navasota, Texas

Superior Honey Company
Thomas F. Ball, Mgr.
4242 Elizabeth Street
Denver 16, Colorado

Hazeltine-Staats Apiaries
204 Sixth Avenue, S. W.
Cedar Rapids, Iowa

Finger Lakes Honey Producers' Co-Op., Inc.
Frederick J. Griffin, Manager
206 West South Street
Groton, New York

Superior Honey Company
Idaho Falls Branch
Idaho Falls, Idaho

Sioux Honey Association
509-11 Plymouth Street
Sioux City, Iowa

Dadant & Sons, Inc.
Hamilton, Illinois

O. E. Timm
Bennington, Nebraska

Banker's Honey Market
Robert Banker, Manager
Route 1
Cannon Falls, Minnesota

Hamilton & Company
2613 South Yates Avenue
Los Angeles, California

Haefeli's Honey Farms
Monte Vista, Colorado

Pleasant Hill Honey Farms
Route 3
Stoughton, Wisconsin

E. J. Bordelon Apiaries
Moreauville, Louisiana

John Kreuger
Deloit, Iowa

Melford-Olson Honey Company
5200 Douglas Drive
Minneapolis, Minnesota

Clearbrook Honey Company
Route 1, Box 62
Cannon Falls, Minnesota

Hughes Honey House
440 South Geneva Avenue
Bellwood, Illinois

Cloverdale Honey Company
113 Central Avenue
Fredonia, New York

Miller Honey Company
67 East 33rd South
Salt Lake City 15, Utah

Helen's Apiaries
F. Q. Bunch, Manager
Welch, Minnesota

Superior Honey Company
Madera, California

Contributors — No Stamps Issued

Cox Honey Farms
Shelley, Idaho

W. C. Chiles
Box 911
Albuquerque, New Mexico

Robert R. Rice
5880 N. W. 22nd Avenue
Miami 47, Florida

E. S. Westfall
Howe Cave, New York

Sioux Honey Association
509-11 Plymouth Street
Sioux City, Iowa

The following bee supply manufacturers have contributed a percentage of their sales regularly and the money is pooled and sent for the support of the American Honey Institute and the American Beekeeping Federation.

Dadant & Sons, Inc.
Hamilton, Illinois

Diamond Match Co.
Chico, California

August Lotz Co.
Boyd, Wisconsin

The Leahy Manufacturing Company
Higginsville, Missouri

The Marshfield Manufacturing Company
Marshfield, Misconsin

The A. I. Root Company
Medina, Ohio

The A. I. Root Company
Council Bluffs, Iowa

Superior Honey Company
Madera, California

Superior Honey Company
P. O. Box 1007
South Gate, California

Superior Honey Company
349 Third Street
Ogden, Utah

Superior Honey Company
4242 Elizabeth Street
Denver 16, Colorado

Superior Honey Company
Idaho Falls Branch
Idaho Falls, Idaho

A. G. Woodman Company
Grand Rapids, Michigan

John Shelby's Honey Jelly

CHARLES L. STRATTON, Windham, N. H.

TOURISTS STOPPING at roadside stands throughout the Vermont and Northern New England area and looking for something unusual—and delicious—are more than likely apt to come across John Shelby's Honey Jelly. Each year over two tons of Vermont clover honey are used in the making of this fine honey product.

Preston C. Cummings, President of Vermont Maple Products Company, shows array of honey jelly. This product is wholesale to Northern N. E. roadside stands and uses over two tons of Vermont Clover Honey annually.

Three flavors of honey jelly are put up in neat six-ounce jars. Customers have a choice of mint, cinnamon, and honey. The jellies are artificially colored and flavored. The green mint makes a nice addition to lamb, cinnamon can be used with ham or as a glaze, while the plain honey jelly is excellent on toast or rolls.

Honey jelly, the result of an attempt to make maple jelly which was found to be impossible, has been made for four years and finds a wide market. It is wholesaled and also sold mail order at $.45 per jar, or 3 for $1.25, plus postage.

Products like honey jelly help to use more honey and bring a higher price for honey. Incidentally, due to honey jelly being a sideline and too far afield from the processing of maple sugar, John Shelby's rights and know-how of manufacture are for sale. John Shelby, Maple Sugar Man, Barre, Vermont.

Asked & Answered

The Food of a Laying Queen Bee

Ques: What food does a laying queen receive? Is she fed pollen?

Ans: The consensus seems to be that a laying queen bee is fed almost if not entirely on royal jelly. Feeding of the queen is usually done by nurse bees which are most numerous in the brood-nest. Examination of the queen's stomach, which is smaller than that of the worker bee, shows no pollen grains, but is filled with a substance indistinguishable from royal jelly. Her enormous egg laying capacity apparently depends upon a rich protein supply which royal jelly provides. Further evidence against the theory that the queen is fed pollen as such is the lack of broken pollen shells in the fecal matter of the queen. The yellow color in the fecal matter of the worker bee is composed largely of pollen shells. These, as you probably know, are completely indigestible.—Jas. I. Hambleton, Asst. Chief Field Crop Insects and Bee Culture Research Branch.

Don't Open Hive Too Often

Ques: I have bees near the plant where I work and have looked at them twice a week or so. They have gotten bad tempered lately and my other bees that got less attention have not. Do frequent visits tend to make bees cross?

Ans: It doesn't pay to examine hives of bees too often. If there happens to be a dearth of nectar, the bees resent being handled, especially if the weather is a bit cool. During a honey flow, once a week is often enough to examine a hive. One can usually tell, from the behavior of the bees at hive entrances, whether or not they are gathering nectar. If the bees drop down on the alighting board, a few inches from the entrance, and crawl into the hive slowly, this is an indication that they are filled with nectar. If the bees hover up and down in front of the hives, when returning from the fields, this may indicate a scarcity of nectar and pollen.

Carrying Over Combs of Alfalfa Honey for Feeding

Ques: I find it necessary to provide from 30 to 50 pounds of honey or its equivalent in sugar previous to the honey flow by a month or so. Would you advise saving combs of alfalfa honey from one season to the next for this purpose when most of this honey will be granulated?

Ans: Carrying over combs of alfalfa honey that is liable to granulate hard before the next spring, would be a questionable practice. Sometimes alfalfa honey granulates so hard that it is difficult for the bees to use it. Honey from other sources that does not granulate can be saved and used in this way, but honey that granulates hard would not work out well. It will be better to extract the honey and save it to feed the bees the next year.

Killing Colonies in the Fall

Ques: I have more colonies than I can keep here with profit, and there is no sale for them. I want to kill about 30 colonies. What is the quickest and cheapest way to do this without injuring honey for feeding purposes?

Ans: Use Cyanogas. Place one tablespoonful of Cyanogas on stiff cardboard and place in hive entrance. Bees will be immediately killed. Avoid the fumes.

Leaving Supers of Honey for the Bees

Ques: Should I extract my honey now if there is but one extracting super filled, or will it be better to leave it for the bees?

Ans: This depends upon whether or not you have a later honey flow in your locality. If not, this honey should be left for the bees. Of course, if you have a dependable fall honey flow, this honey can be extracted at the beginning of this honey flow. It should not be extracted now unless the bees are gathering more than they need from the fields; for, if this honey is extracted during a dearth, the colony would be left destitute.

Advantages of Double-Walled Hives

Ques: Would it be better to use single-walled hives and pack them for winter or use double-walled hives with the packing built in?

Ans: Double-walled hives are now a thing of the past. None are listed in bee supply catalogs anymore. While double-walled hives afford protection from extremes in summer temperature, they are like an ice-box in winter since the heat from the sun's rays cannot warm the cluster. Beekeepers prefer to use single-walled hives on account of the smaller investment, preferring to pay for tar paper wrappings from year to year even though it may cost more during a period of several years.

State and division
Maine
N. H.
Vt.
Mass.
R. I.
Conn.
N. Y.
N. J.
Pa.
N. At
Ohio
Ind.
Ill.
Mich.
Wis.
E. N.
Minn.
Iowa
Mo.
N. Da
S. Da
Nebr.
Kans.
W. N.
Del.
Md.
Va.
W. Va
N. C.
S. C.
Ga.
Fla.
S. Atl.
Ky.
Tenn.
Ala.
Miss.
Ark.
La.
Okla.
Texas
S. Cen
Mont.
Idaho
Wyo.
Colo.
N. Me
Ariz.
Utah
Nev.
Wash.
Oreg.
Calif.
West.
U. S.
1/ F
NOVEMB

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LIBRARY

1957 Honey Production and Stocks on Hand September 15 For Sale

State and division	Colonies of bees		Yield per colony		Honey production		Honey for sale in producer's hand on Sept. 15, 1957
	1956	1957 1/	1956	1957 1/	1956	1957 1/	
	Thousands		Pounds		Thousand pounds		Thous. lbs.
Maine	6	6	20	27	120	162	40
N. H.	8	8	33	42	264	336	134
Vt.	10	11	40	55	400	605	242
Mass.	19	18	19	18	361	324	100
R. I.	2	2	25	18	50	36	11
Conn.	14	14	23	17	322	238	76
N. Y.	191	189	30	62	5,730	11,718	4,453
N. J.	29	31	30	23	870	713	506
Pa.	147	135	17	21	2,499	2,835	992
N. Atl.	426	414	24.9	41.0	10,616	16,967	6,554
Ohio	292	301	13	26	3,796	7,826	2,113
Ind.	186	186	31	35	5,766	6,510	2,995
Ill.	161	166	36	40	5,796	6,640	3,652
Mich.	176	178	36	54	6,336	9,612	4,037
Wis.	196	194	41	77	8,036	14,938	8,664
E. N. Cent.	1,011	1,025	29.4	44.4	29,730	45,526	21,461
Minn.	241	248	80	81	19,280	20,088	8,437
Iowa	155	158	80	78	12,400	12,324	5,916
Mo.	111	117	27	23	2,997	2,691	404
N. Dak.	18	24	84	110	1,512	2,640	1,399
S. Dak.	36	36	112	125	4,032	4,500	1,350
Nebr.	52	55	82	75	4,264	4,125	1,361
Kans.	42	40	31	33	1,302	1,320	343
W. N. Cent.	655	678	69.9	70.3	45,787	47,688	19,210
Del.	3	3	26	22	78	66	26
Md.	28	28	26	20	728	560	280
Va.	143	150	27	23	3,861	3,450	1,242
W. Va.	113	108	16	14	1,808	1,512	318
N. C.	176	187	28	21	4,928	3,927	1,296
S. C.	52	55	20	24	1,040	1,320	238
Ga.	207	217	30	28	6,210	6,076	1,519
Fla.	248	263	70	75	17,360	19,725	5,918
S. Atl.	970	1,011	37.1	36.2	36,013	36,636	10,837
Ky.	136	136	22	15	2,992	2,040	388
Tenn.	167	170	20	15	3,340	2,550	561
Ala.	191	189	19	17	3,629	3,213	835
Miss.	75	73	30	20	2,250	1,460	467
Ark.	98	94	22	28	2,156	2,632	447
La.	91	89	28	25	2,548	2,225	890
Okla.	46	43	24	19	1,104	817	245
Texas	271	260	23	46	6,233	11,960	3,588
S. Cent.	1,075	1,054	22.6	25.5	24,252	26,897	7,421
Mont.	69	72	86	95	5,934	6,840	4,514
Idaho	177	173	50	55	8,850	9,515	6,756
Wyo.	35	37	110	92	3,850	3,404	2,076
Colo.	66	67	62	69	4,092	4,623	2,820
N. Mex.	17	18	45	55	765	990	604
Ariz.	83	89	67	65	5,561	5,785	1,967
Utah	51	54	60	70	3,060	3,780	2,570
Nev.	15	15	90	95	1,350	1,425	812
Wash.	82	86	44	55	3,608	4,730	2,034
Oreg.	51	54	39	40	1,989	2,160	994
Calif.	548	559	53	33	29,044	18,447	8,301
West.	1,194	1,224	57.0	50.4	68,103	61,699	33,448
U. S.	5,331	5,406	40.2	43.5	214,501	235,413	98,931

1/ Preliminary — U.S.D.A. Agricultural Marketing Service, Washington, D. C., October 9, 1957.

XUM

Just News

The **San Antonio Beekeepers' Association** will meet Thursday evening, 8 p.m., November 7th in the offices of the A. I. Root Co. of Texas at 537 S. Flores Street, San Antonio. A new beekeeping movie, never shown in Texas before, will be one of the highlights of the program. The date and program of the next spring beekeeping school will be announced at that time. Refreshments will be served. Prizes will be given. Everyone is invited. You don't have to be a member to attend so be sure to bring a friend.

The annual meeting of the **Utah State Beekeepers' Association** will be held at the Hotel Temple Square in Salt Lake City, on Friday afternoon and Saturday, Nov. 29 and 30. All beekeepers are invited to attend. The program is being centered around the well-known John Holzberlein. Items of interest for both commercial and hobbyist beekeepers are being planned. The banquet will be held at the hotel on Friday night, at which time several county honey queens will be presented. —J. Evan Wright, Pres.

The annual meeting of the **American Beekeeping Federation** will be held at the Neil House, Columbus, Ohio, January 28 to 31, 1958.

The annual meeting of the **Montana State Beekeepers' Association** will be held in the Northern Hotel, Billings, Montana on December 6 and 7, beginning at 9:30 A.M. December 6, with banquet at 7 P.M., December 6. Speakers to be present are: Robert Dadant of Dadant and Sons, Hamilton, Ill.; E. E. Maloy, of Sioux Honey Association, Sioux City, Iowa; and Harry J. Rodenberg, Jr., member of American Beekeeping Federation Executive Committee, Wolf Point, Montana. It is hoped all beekeepers will attend, as there are decisions to be made regarding plans of the association. — Mrs. O. R. Burdett, Sec'y.-Treas.

Golden Queen's Apiary, the home of the Empire State Honey Queen, is really "buzzing" with activity these days according to an article that was in the Sept. 14th Watertown Daily Times. Gloria Engelhardt's picture appeared several times in the story entitled "County Apiarist Produces Honey All Year Round".

The **Eastern Missouri Beekeepers' Meeting** will be held on November 5 at Clayton Court House, Clayton, Mo. There will be election of officers and refreshments.

Program of Nebraska Beekeepers' Annual Meeting

Lincoln, Nebraska College of Agriculture — Nov. 14th and 15th.
Beginners' day, Nov. 14th
Entomology room
9:00 A.M. Registration
10:00 General meeting — Practical demonstrations
1. Assembling new equipment
2. Package bee demonstration
3. Feeding bees
General discussion. Question and answer period.
Drawing for prizes
Nov. 15th. Poultry lecture room
9:30 A.M. Registration
10:00 Invocation
Reports of Committees
Talk by Mrs. Harriett Grace of the American Honey Institute
11:45 Lunch at College Cafeteria
1:00 P.M. Speaker — James I. Hambleton, Research Center, Beltsville, Maryland.
2:00 Business meeting
QUESTION OF INTEREST TO ALL BEEKEEPERS
Should Nebraska have a "Bee Yard Location" amendment to the present laws?
6:30 Banquet
Speaker and presentation of Honey Queens
—Mrs. De Etta Bellin, Sec.

The annual Convention of the **Wisconsin State Beekeepers' Association** will meet November 5 and 6 in the First Lutheran Church at Beaver Dam. Hotel Rogers will be the headquarters. Those appearing on the program are: John F. Long, Chief Apiary Inspector;

S. S. Mathison, County Agent; Alan I. Root of the A. I. Root Co.; Frances Haugh, State Marketing Specialist; C. D. Floyd, Inspector for Minnesota; Dr. C. L. Farrar, North Central Bee Culture Laboratory; Allan Vosburg; Dr. T. A. Gochnauer, University of Minnesota; Robert Banker, Secretary-Treasurer, American Beekeeping Federation; Henry Rahmlow of Wisconsin Horticulture; Art Kehl, Manager of Dadant Branch. Alan I. Root, General Manager of The A. I. Root Company, will be master of ceremonies at the banquet.

The annual convention of the **Illinois State Beekeepers' Association** will meet at St. Nicholas Hotel in Springfield, on November 2 and 3.

The **Westchester County Beekeepers' Association** will hold its next meeting at the Odd Fellows' Hall, 20 Lockwood Ave., New Rochelle, N. Y., on Sunday, November 17, at 2.30 P.M. At this meeting, we will have our "Annual Honey Show". Each member may have an entry in the following classes.

1. Light, amber, and dark extracted honey in one pound jars.
2. Chunk and comb honey.
3. Rendered beeswax in any shape or form. Ribbons will be awarded for first, second, and third prizes in each class, and special prizes for honorable mention. Let's make this meeting a good turnout. Refreshments will be served by the Queen Bees.—Mrs. Alfred Roth, **Pub.**

The **Midwestern Beekeepers' Association** will meet at the I.O.O.F. Hall, 812 Westport Road, Kansas City, Mo. at 2:30 P.M., Sunday, November 10th, 1957. Among the items on the agenda will be a report from the nominating committee, and a general discussion of beekeeping with a question and answer period to follow. Refreshments will be served by the Ladies' Auxilliary. Everyone welcome.—J. F. Maher, Secretary.

The **Cuyahoga County Beekeepers' Association** will hold a meeting on Sunday afternoon, Nov. 3, in the Miles Avenue Christian Church, 9200 Miles Ave., Cleveland. Doors will open at 1 o'clock, meeting will start at 2 o'clock. We will serve doughnuts and coffee. A good speaker and bee movie will be on the program. All beekeepers invited. —Dr. E. E. King, Pres.

On December 5, 6, and 7 the state beekeeping associations of **Washington, Idaho,** and **Oregon** will hold a **Tri-State**

(Continued on page 702)

Chlordane Dust Sure Death To Bees

W. K. DAVIS, Providence, R. I.

TRYING TO eliminate some small ants that get rather pesky around the hives at this time of year when the nights become chilly, I used some chlordane dust under the asbestos shingles I was using as an alighting board for the bees. One colony is located under an apple tree and because of drought conditions we have been experiencing the apples have been falling prematurely. Evidently one of the apples struck the asbestos shingle knocking it out of place and exposing the chlordane dust to the heavy-laden field bees. I didn't notice this condition for a couple of days but then the damage had been done. The chlordane proved to be extremely dangerous to bees.

When a bee comes in contact with the dust it appears to be transmitted throughout the whole colony even affecting the drones and queen bee. Consequently, I lost all the field bees in the colony and the queen. I noted that some bees would take off from the hive and instead of taking normal flight would whirl around pin-wheel fashion or come down like a diving plane and hit the ground. I observed drones in the same condition.

The moral of this story is, I'll tolerate the ants around the hive or at least let the bees take care of the situation. Oh yes, the bees are so affected that they become so enraged that they fly out at you when the hives are opened and they sting with all their might.

XUM

Let's Discuss Our Disease Problems Openly

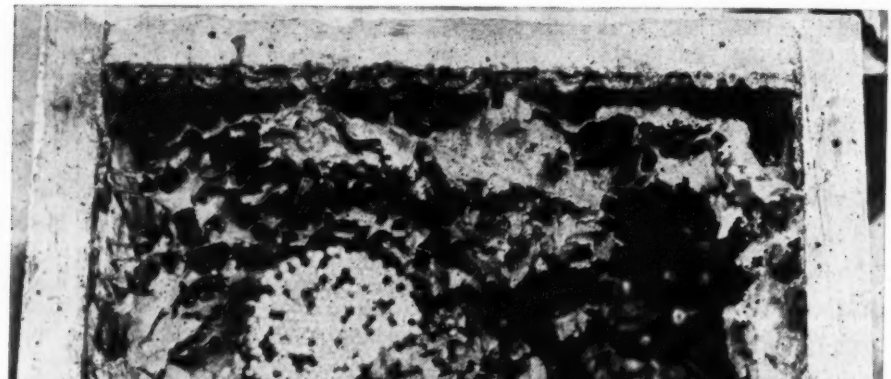
W. K. DAVIS, President Apicultural Society of R. I.

ONE OF THE most important problems facing the bee industry today especially as it pertains to the hobbyist is the training program relative to the use of the antibiotic. Naturally, when we speak of antibiotics we immediately associate them with the inspection program. It is doubtful whether bee inspectors because of their heavy inspection schedules have time to train beekeepers in their State in the proper use of the antibiotics.

Certainly some training is necessary and whether this training program should be shared between the inspection department and the local association is something to consider. The antibiotics in themselves are not lethal weapons as some would have us believe. True in the hands of the untrained they can become such and much more damage than good can occur if the antibiotic is not handled properly.

However, the antibiotic certainly has its place in modern beekeeping and no doubt is here to stay because in most areas it has proved its worth where used properly. Again the matter of usage of the antibiotics should not be involuntarily hushed to the point where beekeepers are forced to withhold valuable information. We can only hope to advance in our efforts to eradicate disease when every aspect of our disease control program is discussed openly whenever and wherever beekeepers get together.

Let's not be prudish in our discussions of the antibiotics, it will get us nowhere and do more harm. Since the hobbyist beekeeper is in the majority it is extremely important that each hobbyist receive some formal training in every aspect of colony management. Local and regional meetings should be planned to include basic training subjects of which the disease control program is no small factor.



A VIEW OF THE INTERIOR OF A NEST OF STINGLESS BEES from Brazil, belonging to the genus Trigona. Unlike the nest of the honeybee where the brood, honey and pollen are all in the same part of the nest, the stingless bees distinctly separate the brood rearing compartment from the food storgae compartment. White brood cells at the left of the nest and the darker wax cells on the right.—U.S.D.A. Photo by Forsythe.

Buy and Sell

Only responsible advertisers and honest advertisements will be admitted to these columns. References required from new advertisers not known to us. Rate: 18c per counted word, each insertion. Each initial, each word in names and addresses, the shortest word such as "a" and the longest word possible for the advertiser to use, as well as any number (regardless of how many figures in it), count as one word. Copy should be in by the 10th of the month, preceding publication.

HONEY FOR SALE

WE BUY AND SELL all varieties of honey. Any quantity. Write us for best prices obtainable. The Hubbard Apiaries, Onsted, Michigan.

IOWA honey, one can or truck loads. Russell D. Smalley, Beaver, Iowa

CLOVER extracted honey in sixties. Abram Brubaker, Rt. 2, Lancaster, Pa.

FOR SALE—Pure tupelo and wild flower in 60's. Honey candy. En-R-G Foods, Inc., P. O. Box 232, Lancaster, Pa.

FINEST BASSWOOD — CLOVER HONEY. New 60's. Fully ripened. You will be pleased. John McColl, Tecumseh, Michigan.

LIGHT HONEY EXTRACTED IN NEW SIXTIES. E. N. WHITE, BRUSH, COLORADO.

NEW YORK STATE'S finest light honey. Nylon strained; liquid in new sixties. Can deliver in ton lots or more. Rulison Honey Farms, R. D. 2, Amsterdam, N. Y. Telephone: Victor 3-1619.

HONEY AND WAX WANTED

BEEKEEPERS TAKE NOTICE—We can not guarantee honey buyers' financial responsibility, and advise all beekeepers to sell for cash only or on C.O.D. terms except where the buyer has thoroughly established his credit with the seller.

WANTED—All grades of extracted honey. Send sample and price. Deer Creek Honey Farms, London, Ohio.

CASH FOR BEESWAX. Write as to quantity and we will quote price. Muench-Kreuzer Candle Co., Inc., Syracuse, N. Y.

WANTED—White extracted or comb honey. Send sample. Millersport Honey Co., Millersport, Ohio.

BEST CASH DEAL for your honey (any grade) and beeswax. Alexander Company, 819 Reynolds Road, Toledo, Ohio.

HONEY WANTED, all grades in 60's. Mail samples, advise quantity, best price. M. R. Cary Corp., 219 Washington Square, Syracuse 8, N. Y.

BEESWAX WANTED—Highest prices paid in cash or trade for bee supplies. The A. I. Root Company, Medina, Ohio; Council Bluffs, Iowa; San Antonio, Texas.

WRITE FOR SHIPPING TAGS and quotations on rendered beeswax. We buy from one pound up and if you have over 25 pounds let us work it into foundation for you at a 25 per cent saving. Walter T. Kelley Co., Clarkson, Ky.

WANTED: Light amber clover, fall flowers, buckwheat, and white clover. Send sample and lowest price. Cloverdale Honey Co., Fredonia, New York.

WANTED—Honey in 60 pound cans, also beeswax, any quantity. L. E. Allen, Tipton, Mich.

CASH for Amber and Buckwheat Honey. Best cash price for wax. Hubbard, Onsted, Michigan,

WANTED—Buckwheat and light amber honey. Eastern Food Products, 421 Bedford Ave., Brooklyn, N. Y.

WAX WORKERS render and buy beeswax, manufacture plain and WAVYWIRED foundation. Prices and shipping tags on request. WAX WORKERS, Ithaca, N. Y.

WANTED, chunk comb and extracted honey. Mail sample and price. Stoller Honey Farms, Latty, Ohio.

WANTED—All grades of extracted honey, car loads or less, cash. Cans exchanged if wanted. Have lots of emptys, 25c each. Honeymoon Products Co., 39 E. Henry St., River Rouge 18, Mich.

FOR SALE

WRITE FOR CATALOG—Quality Bee Supplies at factory prices. Prompt shipment. Satisfaction guaranteed. The Hubbard Apiaries, Manufacturers of Beekeepers' Supplies and Comb Foundation, Onsted, Michigan.

THE BIGGEST BEE SUPPLY Catalog published (64 pages) free for the asking. Listing many items not found in other catalogs. No agents—buy direct and save 20%. WALTER T. KELLEY CO., CLARKSON, KENTUCKY.

FOR SALE—New heart cypress 10-frame bottom boards. KD, 10 or more, $1.00 each; 50 or more, 90 cents each; 100 or more, 85 cents each. One nailed up sample postpaid, $1.25. Fred L. Poole, Elizabethtown, Rt. 2, Box 67, No. Car.

QUEENBEE PAINTING OUTFITS, $1.50 postpaid. Southwick Apiaries, Waban, Mass.

BARGAIN—16 colonies, Kelley extractor, power mower. Corzatt, 269 Columbus, Galesburg, Ills.

BEES AND QUEENS FOR SALE

WE use all possible care in accepting advertisements but we cannot be held responsible in case disease occurs among bees sold or if dissatisfaction occurs. We suggest that prospective buyers ask for certificate of inspection as a matter of precaution.

CARNIOLAN and CAUCASIAN Bees for 1958 Booking queens. Each, $1.00; 2-pound bees with queen, $4.00. 3-pound bees with queen, $5.00. Lewis & Tillery Bee Co., Rt. 3, Box 251, Greenville, Alabama.

PRODUCTIVE ITALIAN QUEENS — $1.00 each. Ten up, 90 cents. Shirl Baker, Rodney, Mich.

XUM

HONEY WANTED
Carloads and less than carloads. Mail sample and best prices in all grades.
C. W. AEPPLER COMPANY
Oconomowoc, Wisconsin

THREE-BAND ITALIANS
Quality and service guaranteed to please.
W. E. PLANT
HATTIESBURG, MISS.

ROYAL JELLY
$16.00 oz. with direction for mixing and taking.
JACKSON APIARIES
Box 58 Funston, Ga.

No more queens this season.
Thank you kindly for favoring us.
Producer of Royal Jelly
Mitchell's Apiaries
Bunkie, La.

HOLLOPETER'S Italian Queens
June 1st - Dec. 1st, $1.00 Each
WHITE PINE BEE FARM
Box 810 Rockton, Pa.

BUILD your own FACTORY TYPE HIVES and SUPERS with SAMSON CORNER JOINTS. Only a bench saw and hand tools required. Our low cost Copyrighted BLUE PRINTS and INSTRUCTIONS cover everything and can save you many dollars. Write for information.
EARL TAYLOR, MALCOM, IOWA

HONEY LABELS
Improved designs, embodying color, balance, simplicity, and distinction. Please send for free samples & prices.
C. W. AEPPLER COMPANY
Oconomowoc, Wisconsin

400 colonies of bees and equipment, $4500. Eugene Frasher, 122 Linden, Big Rapids, Mich.

FOR SALE—2500 hives of bees for April delivery. Loca'ed in Central California's alfalfa seed and cotton district. Write Gleanings, Box 87, Medina, Ohio.

FOR SALE—8 small apiaries, South and Southwest of Ithaca, N. Y. Also 40 good 2-colony winter cases, many good supplies. Ray Wilcox, Odessa, N. Y.

ORDER your three and four frame nuclei for 1958 now. Walker Apiaries, Pharr, Texas.

HELP WANTED

Experienced beekeeper for permanent position in Louisiana and Minnesota. HOPKINS HONEY FARMS, GREENBUSH, MINN.

WANTED experienced beekeeper for permanent position. Walker Apiaries, Pharr, Texas.

WANTED—Experienced queen breeder, give reference and salary wanted. Walter D. Leverette, Box 364, Fort Pierce, Fla.

SEEDS

HONEY PLANTS our specialty. Catalog on request. Pellet Gardens, Atlantic, Iowa.

MISCELLANEOUS

FOR SALE—ROYAL JELLY and The Little Queen Royal Jelly Extractor Royal Jelly Enterprises, 1017 Los Carneros Ave., Napa, Calif.

ROYAL JELLY. Nationally known "Api-Vitalex" brand hi-potency. Royal Jelly products. Capsules and Beauty Creams. Wholesale distributors and agents sought everywhere; particularly among beekeepers. Large profits available. Write airmail for prices and literature. "Api-Vitalex" Dept. BG; Box 6674, Medical Center Station, Dallas 19, Tex.

ROYAL JELLY box of 30 capsules with 50 MM. Royal Jelly per capsule, $4.35 to beekeepers. Retails for $8.50; box of 1000, in bulk, $135.00. Postage paid in the U.S. Prairie View Honey Co., 12303 12th St., Detroit 6, Michigan.

ROYAL JELLY BEAUTY CREAM in ¾-oz. jar, $1.50 to beekeepers, retails for $3.00. 1-oz. jar, $2.00 to beekeepers, retails for $4.00. 2-oz. economy size, $3.50, retails for $7.00. Prairie View Honey Co., 12303 Twelfth St., Detroit 6, Mich.

INFORMATION on producing and preserving Royal Jelly commercially. We are the first to advertise Royal Jelly for sale in natural form, in leading bee journals throughout the U.S.A. I don't believe our record of production is surpassed anywhere. Information of our years of experience "The Short Steps to Production" will be sent prepaid for only $4.75. O. K. Anderson & Son, Box 193, Coffee Springs, Ala., U. S. A.

Honey Jar Capping Machine with chucks for 38, 48, 53, and 58mm caps, Cap Tightener, Flash Heater, Electric Budgit Hoist 2000 lbs. for handling drums of honey. Hubbard Apiaries, Manufacturers Bee Supplies & Comb Foundation, Onsted, Michigan.

WANTED BEES. Middle Atlantic States and vicinity. Gleanings, Box 1157, Medina, Ohio.

BEES REMOVED from house or tree to hive without touching either house or bees. Bees will then move honey into hive. Save property, honey and bees with my method. Send $2 for details. Satisfaction guaranteed. George Hawkins, Rt. 1, Lawson, Mo.

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THREE BANDED ITALIANS
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XUM

SUE BEE SAYS:

PLAN AHEAD

Everyone is busy now taking care of this year's honey crop. Do not neglect the fall work that will mean the diffference between a good crop and just a crop next year.

One of the most important items is the health of the colonies you will winter over. A small amount of Fumidil B fed this fall will pay big dividends next spring

We have a large, fresh stock of Fumadil B as well as Terramycin and Sulfathiazole. Check these prices. Your order in the mail today will insure prompt attention.

0.5 gm. Fumadil B.	$ 2.40
9.5 gm. Fumadil B.	28.50
1 lb. Sulfa Sodium or fine powder	4.50
10 lb. Sulfa Sodium or fine powder	38.25
1 lb. Terramycin T. M. 5	1.25
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Anaheim, Calif. Rogers, Texas
Tacoma, Wash.

BEE LINES TO THE EDITOR

(Continued from page 644)

were dusted with talcum powder. This I dismissed as a crack-pot idea, but it stuck in my mind. Several weeks ago, I thought I'd give it a try. It worked. I have used it since and gotten few stings.

"Have you heard of this? 'Talcum powder to prevent stings!' Why? Is it the odor or are the pores of the skin, filled by the talc powder?—W.L.M.

[We hadn't heard of talcum to keep bees from stinging. If any of our readers try it, drop a line to the Editor to tell us how it works.—Ed.]

Gleanings Goes to Many Places

"In the past two weeks I have received very interesting letters from Gleanings' readers, from Chile, Argentina, New Brunswick, England, and South Africa, referring to my recent article in Gleanings.

"It is amazing how Gleanings goes to so many different places. However, it seems to me that beekeepers are alike wherever they may live. Many thanks for all past favors. They have certainly been appreciated."—H.J.R.

"POLLEN LOADS OF THE HONEYBEE"

(Continued from page 661)

of the middle legs placed between them one at a time and drawn forward. This leaves the sticky mass of pollen loaded into the rows of stiff combs on the inner side of the hind metatarsi.

When sufficient pollen has been collected the final action takes place. At the distal end of the inner side of the tibia of the hind legs is a strong rake composed of stiff pectens. The rake is held against the top of the opposite metatarsal combs and pushed downwards raking out all the moist pollen in a compact mass into the pollen press between the rake and the auricle of the opposite leg. The joint between the tibia and the tarsus is then closed and the paste-like pollen is squeezed in the pollen press and pushed outward and upward. Guided by minute teeth on the floor of the auricle, and a fringe of hairs on the edge it comes to rest on the smooth, concave floor of the pollen basket. As the pollen pack gets larger the surrounding hairs hold the mass, some supporting the sides and some supporting underneath.

A single hair on the floor of the pollen basket acts as a "pin" through the center of the pollen load.

Observations made by Von Frisch indicate that it may take some bees three times as long as others to make a pollen pack. A forager gathering mainly nectar may also pack pollen, but her loads are not so large as those of a pollen gatherer because she is packing only the pollen that her body hairs have picked up accidentally as a result of brushing against the anthers of flowers while gathering nectar. In many cases she may merely drop the pollen on the ground instead of packing it.

When pollen is not abundant in a flower the bee uses its mandibles to scrape the pollen from the anthers, and the pollen is packed while the bee rests on the flower. Occasionally a bee will visit more than one flower species which results in a mixed load. When the load is complete the bee returns to her hive free from all loose pollen grains, all of which have been packed neatly in the pollen baskets.

(Continued on next page)

MORE JUST NEWS

The winter meeting of the **Empire State Honey Producers' Association** will be held December 6 and 7 at the Onondaga Hotel in Syracuse, New York.

Edgar Williams, Pierpont, Ohio, a well-known beekeeper and comb honey producer, died September 22.

Central Jersey Beekeepers' Meeting. —The November 8, 7:30 P.M. meeting of the Central Jersey beekeepers is to be held at the Office of M. A. Clark, 20 Court St., Freehold, N. J. After the election of officers for the coming year, Prof. Robert Filmer of Rutgers University will make an interesting talk. A film "When Bee Meets Bee" is to be shown at end of meeting. Visitors are welcome. — Forrest Campbell, Sec'y.-Treas.

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POLLEN LOADS OF THE HONEYBEE

(Continued from previous page)

Conclusions

Color variations in pollen loads may be due to the following causes:

1. To the condition of the pollen when it is gathered such as new, old, dry, moist, etc.
2. To the color of the moistening material.
3. To the inclusion of adulterants such as dust, soot or spores present on the flower at the time of the collection.

Because of the above facts, and under almost all conditions there will be a slight or even a considerable variation in the color of pollen loads on bees working any plant species.

Although the shapes of pollen loads may be used as a criterion for identifying pollen grains, the only exact method of identification is through microscopical examination of properly prepared slides.

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50 up ..... .65 ea.
Tested queens, 1.50 ea.

Merrill Bee Co.

P.O. Box 115, State Line, Miss.

LIVE AND LEARN

(Continued from page 676)

get into the nest, so I guess that at least I will get all the flying insects. But because I couldn't get at the nest, I'll probably have to keep on dusting them until frost comes along and makes it look as though I did a good job of eradication.

Sometimes I charge for this service, depending upon who I am doing the work for, or how long it takes to do it. Usually though, I charge it off to advertising, and send my clients to one of the stands that sell my honey. That builds up good will on the part of the stand owners and on the customers, and sometimes sells a lot more honey than you would imagine. I am getting to like selling honey through the stands. True, you have to give a discount for the selling job that they do for you, but it is a lot better than having to get up from a nice steak or something to answer a lot of fool questions, as listed in the September article.

XUM

CARNIOLAN and CAUCASIAN QUEENS

1957 is nearing to a close and I desire to thank my customers for their patronage and impatience in filling their orders during the wettest season on record according to weather bureau report. Increasing output again to try to meet the increased demand for Carniolan and Caucasian Queens. They are the answer to gentleness and production. Booking orders for (queens only) for early March 1958.

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THANKS!
for your nice patronage
the past season.

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Breeders of
Italian Bees and Queens

Caucasian Bees & Queens
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Be assured of your favorite shipping date.

Howard Weaver
Navasota, Texas

CANADA'S
National Monthly Magazine for Beekeepers
Canadian Bee Journal
Streetsville, Ontario, Canada

JUST NEWS

(Continued from page 695)

meeting in Pendleton, Oregon. By holding the joint meeting it is anticipated that the associations will secure a group of outstanding personnel in the field of bee culture for the program. The membership of each association will be informed of the exact meeting place and of the program in the very near future. Inquiries on this meeting should be addressed to Mr. Oliver Petty, Route 4, Box 303P, Albany, Oregon. — W. P. Stephen, Asst. Entomologist.

The **Alberta Beekeepers' Convention** will be held in Edmonton, Airlines Hotel, November 7 and 8. A cordial invitation to all beekeepers.

The next meeting of the **Middlesex County Beekeepers' Association (Mass.)** is scheduled for Saturday, November 30, 1957, at 6:30 P.M. at the Waltham Field Station. At this meeting we will resume our practice of having a potluck supper before the business meeting. Our fall season got off to a wonderful start with our banquet held on Saturday, October 26. A vote of thanks was given to Chairman "Dick" Corrigan for his work in making arrangements for this meeting. Member A. G. Andree of Dover, Mass., was the lucky winner of the 1957 Club Hive. We wish him lots of luck with this hive.— L. C. Proctor, Corresponding Secretary.

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Our bees are in wonderful shape for winter. Soil moisture is abundant. Prospects look good for clovers and other honey plants next spring. Orders are already being booked and inquiries are brisker than usual. THANKS AGAIN FOR YOUR PATRONAGE. We consider it a privilege to serve you.

Reg. U. S. Pat. Off.

Fraternally yours

JENSEN'S APIARIES Macon, Miss. U. S. A.

DADANT STARLINE HYBRIDS &
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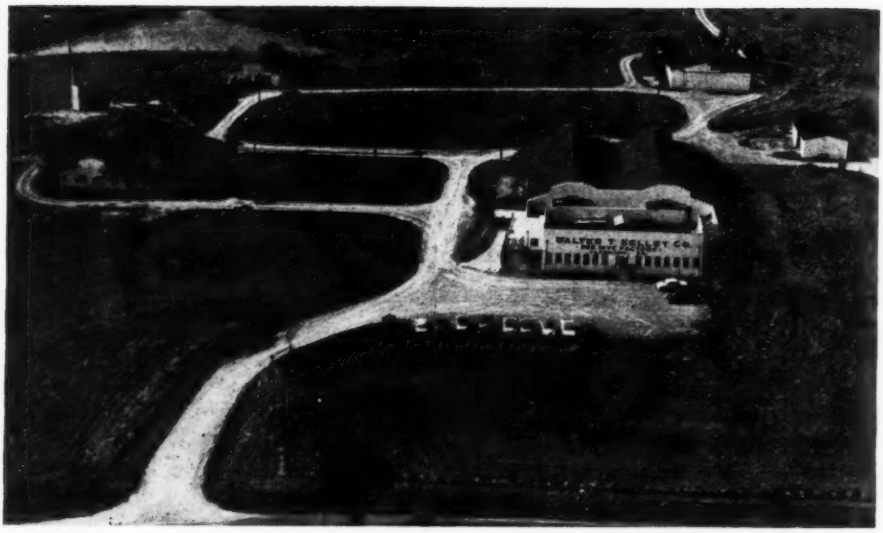
ONE PICTURE IS WORTH 1,000 WORDS



This is a July 1957 aerial view of our plant. The building to the lower right with our name measures 100 by 200 feet and contains our office, shipping room and bulk storage; to the rear is our wax works. To the left front is our wood shop (bee hive factory) and behind it is our tin, machine and welding shop. In our 64-page catalog we list many items not found in other catalogs and our prices are very low because we do not have agents, but sell direct to you beekeepers. Write today for our free catalog.

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